# BULLETIN

OF THE

# Society for the Promotion of Engineering Education

Vol. II LANCASTER, PA., FEBRUARY, 1912 No. 6


## TABLE OF CONTENTS.


| | PAGE. |
|---|---|
| Standing Committees | 277 |
| Officers, 1911–1912 | 278 |
| List of Members | 279 |
| List of New Members | 327 |
| Geographical Distribution of Members | 329 |
| Geographical Summary of Members | 339 |
| Summary of Membership by Occupations | 340 |
| Table of Institutions Represented | 341 |
| General Summary | 344 |
| Constitution | 345 |
| By-laws | 347 |
| Publications | 348 |
| List of Past Officers | 349 |
| List of Members of Previous Councils | 350 |
| List of Deceased Members | 352 |


### STANDING COMMITTEES

**On Entrance Requirements for Engineering Schools**

J. J. FLATHER, *Chairman*, L. P. BRECKENRIDGE, J. P. JACKSON, F. W. MCNAIR.

**On Statistics of Engineering Education**

H. W. TYLER, *Chairman*, L. J. JOHNSON, WALTER B. SNOW.

**On Industrial Education**

C. M. WOODWARD, *Chairman*, HENRY T. EDDY, G. F. SWAIN, G. A. GOODENOUGH, A. L. WILLISTON AND W. B. RUSSELL.

**Representatives of S. P. E. E. on Joint Committee on Engineering Education**

D. C. JACKSON, *Chairman*, S. SHELDON, *Secretary*, A. C. HUMPHREYS.

For Committees with membership prescribed by the Constitution or By-laws see latter part of this number.

## OFFICERS 1911–1912

*President,*

W. G. RAYMOND, Iowa City, Iowa.

*Vice-Presidents,*

G. C. ANTHONY, Tufts College, Mass.,
FRANK B. GILBRETH, New York, N. Y.

*Secretary,*

H. H. NORRIS, Ithaca, N. Y.

*Treasurer,*

WM. O. WILEY, New York City.

### COUNCIL

**Elective Members**

F. H. CONSTANT, Minneapolis, Minn.,
F. A. GOETZE, New York City,
H. WADE HIBBARD, Columbia, Mo.,
J. H. LEETE, Pittsburgh, Pa.,
E. R. MAURER, Madison, Wis.,
J. C. OSTRUP, New York City,
C. R. RICHARDS, New York City,
*whose terms of office expire in 1912.*

C. H. BENJAMIN, Lafayette, Ind.,
G. W. BISSELL, E. Lansing, Mich.,
E. E. BRYDONE-JACK, Winnipeg, Manitoba,
W. H. P. CREIGHTON, New Orleans, La.,
J. F. HAYFORD, Evanston, Ill.,
C. R. RICHARDS, Lincoln, Neb.,
H. W. TYLER, Boston, Mass.,
*whose terms of office expire in 1913.*

J. E. BOYD, Columbus, O.,
C. E. CROUCH, Grand Forks, N. D.,
F. L. EMORY, Morgantown, W. Va.,
C. E. MAGNUSSON, Seattle, Wash.,
H. H. STOEK, Urbana, Ill.,
J. A. L. WADDELL, Kansas City, Mo.,
A. J. WOOD, State College, Pa.,
*whose terms of office expire in 1914.*

**Past-Presidents—Members Ex-Officii**

G. F. SWAIN, Cambridge, Mass.,
MANSFIELD MERRIMAN, N. Y. City,
H. T. EDDY, Minneapolis, Minn.,
T. C. MENDENHALL, Ravenna, O.,
IRA O. BAKER, Urbana, Ill.,
F. O. MARVIN, Lawrence, Kas.,
ROBERT FLETCHER, Hanover, N. H.,
C. M. WOODWARD, St. Louis, Mo.,
C. FRANK ALLEN, Boston, Mass.,
F. W. MCNAIR, Houghton, Mich.,
C. L. CRANDALL, Ithaca, N. Y.,
D. C. JACKSON, Boston, Mass.,
CHAS. S. HOWE, Cleveland, O.,
F. E. TURNEAURE, Madison, Wis.,
H. S. MUNROE, New York City,
A. N. TALBOT, Urbana, Ill.

## OFFICERS 1912–1913

*President,*

WM. T. MAGRUDER, Columbus, O.

*Vice-Presidents,*

L. S. MARKS, Cambridge, Mass., F. W. SPERR, Houghton, Mich.

*Secretary,*

H. H. NORRIS, Ithaca, N. Y.

*Treasurer,*

WM. O. WILEY, New York City.

### COUNCIL

**Elective Members**

C. H. BENJAMIN, Lafayette, Ind.,
G. W. BISSELL, E. Lansing, Mich.,
E. E. BRYDONE-JACK, Winnipeg, Manitoba,
W. H. P. CREIGHTON, New Orleans, La.,
J. F. HAYFORD, Evanston, Ill.,
C. R. RICHARDS, Urbana, Ill.,
H. W. TYLER, Boston, Mass.,

*whose terms of office expire in 1913.*

J. E. BOYD, Columbus, O.,
C. E. CROUCH, Grand Forks, N. D.,
F. L. EMORY, Morgantown, W. Va.,
C. E. MAGNUSSON, Seattle, Wash.,
H. H. STOEK, Urbana, Ill.,
J. A. L. WADDELL, Kansas City, Mo.,
A. J. WOOD, State College, Pa.,

*whose terms of office expire in 1914.*

F. L. BISHOP, Pittsburgh, Pa.,
G. R. CHATBURN, Lincoln, Nebr.,
O. P. HOOD, Pittsburgh, Pa.,
F. P. MCKIBBEN, South Bethlehem, Pa.,
G. D. SHEPARDSON, Minneapolis, Minn.,
W. B. SNOW, Boston, Mass.,
J. C. TRACY, New Haven, Conn.,

*whose terms of office expire in 1915.*

**Past-Presidents—Members Ex-Officii**

G. F. SWAIN, Cambridge, Mass.,
MANSFIELD MERRIMAN, N. Y. City,
H. T. EDDY, Minneapolis, Minn.,
T. C. MENDENHALL, Ravenna, O.,
IRA O. BAKER, Urbana, Ill.,
F. O. MARVIN, Lawrence, Kans.,
ROBERT FLETCHER, Hanover, N. H.,
C. M. WOODWARD, St. Louis, Mo.,
C. FRANK ALLEN, Boston, Mass.,
F. W. MCNAIR, Houghton, Mich.,
C. L. CRANDALL, Ithaca, N. Y.,
D. C. JACKSON, Boston, Mass.,
CHAS. S. HOWE, Cleveland, O.,
F. E. TURNEAURE, Madison, Wis.,
H. S. MUNROE, New York City,
A. N. TALBOT, Urbana, Ill.,
W. G. RAYMOND, Iowa City, Iowa.

# LIST OF MEMBERS

**Revised to Jan. 15, 1912.**

ABBOTT, F. B., Teacher of Mechanical Drawing, Brooklyn Manual Training High School, Brooklyn, N. Y. ..... 1904

ADAMS, C. A., Professor of Electrical Engineering, Harvard University, Cambridge, Mass. ..... 1894

ADAMS, C. L., Associate Professor of Drawing and Descriptive Geometry, Massachusetts Institute of Technology, Boston, Mass. 1904

ADAMS, F. D., Dean of the Faculty of Applied Science, McGill University, Montreal, Canada..... 1909

ADAMS, W. H., Professor of Mechanical Engineering, Imperial Pei Yang University, Tientsin, China..... 1908

ADLER, A. A., Instructor in Mechanical Drawing and Designing, Polytechnic Institute of Brooklyn, Brooklyn, N. Y..... 1910

AKELEY, L. E., Dean of the College of Engineering and Professor of Physics, University of South Dakota, Vermillion, S. D..... 1910

ALDERSON, VICTOR C., President, Colorado School of Mines, Golden, Colo. ..... 1900

ALDRICH, WM. S., Powell, Wyo. ..... 1893

ALEXANDER, M. W., Engineer with the General Electric Co., West Lynn, Mass. ..... 1911

ALGER, P. R., Professor of Mathematics, U. S. Naval Academy, Annapolis, Md. ..... 1909

ALLEN, C. FRANK, Professor of Railroad Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1893

ALLEN, C. M., Professor of Hydraulic Engineering, Worcester Polytechnic Institute, Worcester, Mass..... 1903

ALLEN, J. R., Professor of Mechanical Engineering, University of Michigan, Ann Arbor, Mich..... 1907

ANDERSON, A. H., Assistant Professor of Mechanical Engineering, Armour Institute of Technology, Chicago, Ill. ..... 1910

ANDERSON, D. S., Professor of Electrical Engineering, Tulane University, New Orleans, La. ..... 1900

ANDERSON, F. PAUL, Director of the College of Mechanical and Electrical Engineering and Professor of Mechanical Engineering, State University of Kentucky, Lexington, Ky..... 1894

ANDERSON, G. G., Consulting Civil Engineer, 1232 First National Bank Bldg., Denver, Colo. ..... 1910

ANDERSON, WILLIAM, Instructor in Mechanical and Electrical Engineering, Michigan College of Mines, Houghton, Mich. ..... 1910

ANTHONY, G. C., Professor of Technical Drawing and Dean of the Engineering School, Tufts College, Tufts College, Mass..... 1896
APPLETON, W. D., Mechanical Engineer, The Guanajuato Power and Electric Co., Zamora, Michoacan, Mexico..... 1907
ARD, C. E., Professor of Mechanical Engineering and Superintendent of Construction, Mississippi A. and M. College, Agricultural College, Miss. ..... 1911
ARKLEY, L. M., Lecturer in Mechanical Engineering, University of Toronto, Toronto, Canada..... 1908
ARNOLD, BION J., Consulting Electrical Engineer, Borland Building, Chicago, Ill. ..... 1906
ASHE, S. W., Engineer and Educator, General Electric Co., Harrison, N. J. ..... 1911
ASHLEY, G. F., Assistant Professor of Technical Drawing, Tufts College, Tufts College, Mass. ..... 1908
ASTON, JAMES, Instructor in Chemical Engineering, University of Wisconsin, Madison, Wis. ..... 1910
ATKINSON, F. W., President of the Polytechnic Institute of Brooklyn, Brooklyn, N. Y..... 1905
ATKINSON, THOS. W., Dean of the College of Engineering, Louisiana State University, Baton Rouge, La..... 1907
AUDE, H. T. R., Assistant Professor of Mathematics, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1910
AVERILL, E. A., Managing Editor, American Engineer and Railroad Journal, 140 Nassau St., New York, N. Y. ..... 1911
AYARS, W. S., Professor of Electrical and Mechanical Engineering, Nova Scotia Technical College, Halifax, N. S. ..... 1907
AYER, A. W., General Superintendent, Harrison Bros. & Co., Inc., Philadelphia, Pa. ..... 1894
AYER, F. E., Associate Professor of Civil Engineering, University of Cincinnati, Cincinnati, O..... 1907
AYRES, BROWN, President of the University of Tennessee, Knoxville, Tenn. ..... 1898
BABCOCK, E. J., Dean of the College of Mining Engineering and Professor of Chemistry and Metallurgy, University of North Dakota, Grand Forks, N. D..... 1907
BABCOCK, WARREN, Professor of Mathematics, Michigan Agricultural College, East Lansing, Mich..... 1908
BACON, E. W., Secretary, J. B. Lippincott Co., Philadelphia, Pa. .. 1911
BACON, G. M., Civil Engineer, 159 Pierpont Ave., Salt Lake City, Utah ..... 1907
BAKER, IRA O., Professor of Civil Engineering, University of Illinois, Urbana, Ill. ..... 1893
BALL, ALBERT, Assistant Professor of Physics and Mechanical and Electrical Engineering, Cooper Union, New York, N. Y..... 1908

BALLOU, W. A., Instructor in Mathematics, Pratt Institute of Brooklyn, Brooklyn, N. Y. ..... 1908

BANKSON, E. E., Instructor in Civil Enginering, University of Pittsburgh, Pittsburgh, Pa. ..... 1910

BARLOW, W. E., Professor of Metallurgy and Metallography and Dean of Graduate Department, Virginia Polytechnic Institute, Blacksburg, Virginia. ..... 1910

BARNARD, W. N., Professor of Steam Engineering, Cornell University, Ithaca, N. Y. ..... 1910

BARNES, F. A., Assistant Professor of Railroad Engineering, Cornell University, Ithaca, N. Y. ..... 1904

BARNEY, S. E., Assistant Professor of Civil Engineering, Yale University, New Haven, Conn. ..... 1894

BARRACLOUGH, S. H., Professor of Mechanical Engineering, Russell School of Engineering, University of Sydney, Sydney, Australia. ..... 1900

BARROWS, H. K., Associate Professor of Hydraulic Engineering, Massachusetts Institute of Technology, and of Barrows and Breed, consulting engineers, 6 Beacon St., Boston, Mass. ..... 1902

BARROWS, W. E., JR., Assistant Professor of Electrical Engineering, Armour Institute of Technology, Chicago, Ill. ..... 1908

BASQUIN, O. H., Professor of Applied Mechanics, College of Engineering, Northwestern University, Evanston, Ill. ..... 1908

BASS, FREDERIC, Director of the Engineering Division, Minnesota State Board of Health and Professor of Municipal and Sanitary Engineering, University of Minnesota, Minneapolis, Minn. ..... 1904

BATES, ONWARD, Civil Engineer, 332 S. Michigan Ave., Chicago, Ill. ..... 1903

BAUER, W. C., Professor of Electrical Engineering, Northwestern University, Evanston, Ill. ..... 1910

BEAN, P. L., Assistant Professor of Civil Engineering, University of Maine, Orono, Me. ..... 1910

BECKER, A. J., Professor of Applied Mathematics and Mechanical Drawing, State University of North Dakota, Grand Forks, N. D. ..... 1907

BECKSTRAND, E. H., Professor of Mechanical Engineering, University of Utah, Salt Lake City, Utah. ..... 1911

BEEBE, M. C., Professor of Electrical Engineering, University of Wisconsin, Madison, Wis. ..... 1906

BENEDICT, H. Y., Professor of Applied Mathematics and Dean of the College of Arts, University of Texas, Austin, Texas. ..... 1906

BENJAMIN, C. H., Dean of the Schools of Engineering, Purdue University, Lafayette, Ind. ..... 1893

BENKERT, H. N., Professor of Civil Engineering, Drexel Institute, Philadelphia, Pa. ..... 1909

BENNETT, EDW., Associate Professor of Electrical Engineering, University of Wisconsin, Madison, Wis. ..... 1909

BENSEL, J. A., New York State Engineer and Surveyor, Albany, N. Y. ..... 1910

BENTON, J. R., Professor of Physics and Electrical Engineering, and Dean of the College of Engineering, University of Florida, Gainesville, Fla. ..... 1905

BENZENBERG, G. H., Consulting Civil Engineer, 255 Greenbush St., Milwaukee, Wis. ..... 1907

BERENTS, H., Engineer, Anhui Railways, Wuhu, China..... 1911

BERG, E. J., Professor in charge of Electrical Engineering, University of Illinois, Urbana, Ill..... 1910

BERGER, F. A., Assistant Professor in Mechanical Engineering, Washington University, St. Louis, Mo. ..... 1910

BERRESFORD, A. W., Vice-President and General Manager, The Cutler-Hammer Mfg. Co., Milwaukee, Wis. ..... 1911

BERRY, W. J., Assistant Professor of Mathematics, Polytechnic Institute of Brooklyn, Brooklyn, N. Y..... 1910

BETTS, PHILANDER, Chief Engineer, Public Utility Commission of New Jersey, Newark, N. J. ..... 1907

BEYER, S. W., Vice-Dean of the Division of Engineering and Professor of Geology and Mining Engineering, Iowa State College, Ames, Ia. ..... 1899

BICKFORD, H. C., Electrical Engineer, Dodge, Day & Zimmermann, 5542 Larchwood Ave., Philadelphia, Pa. ..... 1910

BIEGLER, P. S., University of Montana, Missoula, Mont. ..... 1908

BIRD, WM. W., Professor of Mechanical Engineering, and Director of the Washburn Shops, Worcester Polytechnic Institute, Worcester, Mass. ..... 1910

BISHOP, C. C., Instructor, Buffalo Technical High School, Buffalo, N. Y. ..... 1911

BISHOP, F. L., Professor of Physics, and Dean of the School of Engineering, University of Pittsburgh, Pittsburgh, Pa..... 1907

BISSELL, G. W., Dean of Engineering and Professor of Mechanical Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1894

BITTING, H. S., General Director of the Williamson Free School of Mechanical Trades, Delaware Co., Pa..... 1909

BIXBY, F. L., Professor of Civil and Irrigation Engineering, New Mexico College of Agriculture and Mechanic Arts, Agricultural College, New Mexico..... 1910

BIXBY, W. H., General, U. S. Army, 414 Oxford Bldg., Washington, D. C. ..... 1898

BLACK, ADOLPH, Assistant Professor of Civil Engineering, Columbia University, New York, N. Y. ..... 1907

BLAKER, ERNEST, Assistant Professor of Physics, Cornell University, Ithaca, N. Y. ..... 1910
BLANCHARD, A. H., Professor of Highway Engineering, Columbia University, New York, N. Y. ..... 1902
BLAND, J. C., Engineer of Bridges, Pennsylvania Lines West of Pittsburgh, Pittsburgh, Pa. ..... 1911
BLESSING, G. F., Professor of Mechanical Engineering, in charge of Engineering, Swarthmore College, Swarthmore, Pa. ..... 1910
BLUME, L. F., Electrical Engineer, General Electric Co., Pittsfield, Mass. ..... 1911
BOARDMAN, H. S., Dean of the College of Technology and Professor of Civil Engineering, University of Maine, Orono, Me..... 1903
BOLTON, F. C., Professor of Electrical Engineering, Agricultural and Mechanical College of Texas, College Station, Texas..... 1910
BOOTHROYD, S. L., Assistant Professor of Topographic and Geodetic Surveying, Cornell University, Ithaca, N. Y..... 1908
BOVEY, H. T., Bank of Montreal, 47 Threadneedle St., London, E. C. England ..... 1893
BOWERMAN, M. R., Structural Draftsman, Hanke Iron Works, 1831 S. Central Park Ave., Chicago, Ill. ..... 1909
BOYD, ALFRED, Professor of Civil Engineering, Oklahoma A. and M. College, Stillwater, Okla. ..... 1909
BOYD, J. E., Professor of Mechanics, Ohio State University, Columbus, O. ..... 1907
BOYLE, A. C., JR., Professor of Mining Engineering and Geology, University of Wyoming, Laramie, Wyo. ..... 1911
BRACKETT, B. B., Professor of Electrical Engineering, South Dakota State College, Brookings, S. D. ..... 1906
BRADBURY, R. D., Instructor in Civil Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1907
BRADFORD, J. N., Professor of Architecture, Ohio State University, Columbus, O. ..... 1896
BRADFORD, ROBERT H., Professor of Metallurgy, University of Utah, Salt Lake City, Utah ..... 1911
BRATTON, W. A., Professor of Mathematics, Whitman College, Walla Walla, Wash. ..... 1911
BRAY, C. D., Professor of Mechanical Engineering, Tufts College, Tufts College, Mass. ..... 1894
BRECKENRIDGE, L. P., Professor of Mechanical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. .... 1893
BREED, C. B., Associate Professor of Civil Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1904
BROOKE, W. E., Professor of Mathematics and Mechanics, College of Engineering, University of Minnesota, Minneapolis, Minn.. 1902

BROOKS, J. ANSEL, Associate Professor of Mechanics and Mechanical Drawing, Brown University, Providence, R. I. ..... 1904

BROOKS, J. P., Director, Clarkson School of Technology, Potsdam, N. Y. ..... 1898

BROOKS, MORGAN, Professor of Electrical Engineering, University of Illinois, Urbana, Ill. ..... 1899

BROWN, GEO. L., Professor of Mathematics and Dean of the Faculty, South Dakota State College of Agriculture and Mechanic Arts, Brookings, S. D. ..... 1910

BROWN, H. B., President, Valparaiso University, Valparaiso, Ind.. 1908

BROWN, N. H., University of Texas, Austin, Tex. ..... 1904

BROWN, R. L., Professor of Mining and Geology, Alabama Polytechnic Institute, Auburn, Ala. ..... 1908

BROWNE, A. W., Professor of Inorganic and Analytical Chemistry, Cornell University, Ithaca, N. Y. ..... 1910

BROWNE, WM. HAND, JR., Professor of Physics and Electrical Engineering, North Carolina College of Agriculture and Mechanic Arts, West Raleigh, N. C. ..... 1899

BRUEGEL, A. T., Manager, The Hess-Bright Mfg. Co., Philadelphia, Pa. ..... 1900

BRYANS, W. R., Assistant Professor in the School of Applied Science, New York University, University Heights, N. Y. .... 1908

BRYANT, J. M., Assistant Professor in Electrical Engineering, University of Illinois, Urbana, Ill. ..... 1910

BRYDONE-JACK, E. E., Professor of Civil Engineering, University of Manitoba, Winnipeg, Man. ..... 1902

BUCK, A. M., Assistant Professor of Railway Electrical Engineering, University of Illinois, Urbana, Ill. ..... 1910

BUMP, M. R., Treasurer and General Manager, Empire District Electrical Co., Secretary, Doherty Operating Co., 60 Wall St., New York, N. Y. ..... 1907

BURGER, W. H., Assistant Professor of Civil Engineering, Northwestern University, College of Engineering, Evanston, Ill..... 1910

BURGESS, C. F., Professor of Chemical Engineering, University of Wisconsin, Madison, Wis. ..... 1896

BURNS, CLINTON S., Consulting Hydraulic Engineer, Firm of Burns & McDonnell, Kansas City, Mo. ..... 1910

BURNSIDE, C. H., Assistant Professor of Mechanics, Columbia University, New York City ..... 1910

BURPEE, F. E., Assistant Professor of Mathematics and Instructor of Steam Engineering, Bucknell University, Lewisburg, Pa.... 1910

BURR, W. H., Professor of Civil Engineering, Columbia University, New York, N. Y. ..... 1893

BURSLEY, JOSEPH A., Junior Professor of Mechanical Engineering, University of Michigan, Ann Arbor, Mich. ..... 1910

BURT, H. J., Chief Engineer, Holabird & Roche, Architects, 1618 Monadnock Block, Chicago, Ill. ..... 1910

BURTON, A. E., Professor of Topographical Engineering, in charge of Department of Drawing, and Dean of the Massachusetts Institute of Technology, Boston, Mass. ..... 1904

BUSER, J. T., Instructor in Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1910

BUTTERFIELD, A. D., Professor of Mathematics, Worcester Polytechnic Institute, Worcester, Mass. ..... 1908

BUTTS, WM. H., Professor of Mathematics and Assistant Dean of the Engineering Department, University of Michigan, Ann Arbor, Mich. ..... 1910

CAJORI, FLORIAN, Professor of Mathematics and Dean of the School of Engineering, Colorado College, Colorado Springs, Colo. ..... 1904

CALDERWOOD, J. P., Assistant Professor of Mechanical Engineering, Pennsylvania State College, State College, Pa. ..... 1909

CALDWELL, EDWARD, Treasurer of the McGraw-Hill Book Co., 239 W. 39th St., New York City, N. Y. ..... 1905

CALDWELL, F. C., Professor of Electrical Engineering, Ohio State University, Columbus, O. ..... 1897

CALLAN, J. A. C., Instructor in Civil Engineering and Drawing, Union University, Schenectady, N. Y. ..... 1909

CALLEN, A. C., Instructor in Mining Engineering, Lehigh University, South Bethlehem, Pa. ..... 1910

CALNAN, J. W., Manager of the Library Bureau Laboratories and Instructor in charge of the Department of Chemistry, Franklin Union, Boston, Mass. ..... 1910

CAMP, W. M., Editor, Railway and Engineering Review, 7740 Union Ave., Chicago, Ill. ..... 1904

CARNEGIE, ANDREW, 2 E. 91st St., New York City (Life Member) .. 1911

CARPENTER, H. D., 5404 Monroe Ave., Chicago, Ill. ..... 1910

CARPENTER, L. G., Consulting Engineer, Equitable Bldg., Denver, Colo. ..... 1895

CARPENTER, R. C., Professor of Experimental Engineering, Cornell University, Ithaca, N. Y. ..... 1910

CARROLL, H. H., Instructor in Technical Drawing, Tufts College, Tufts College, Mass. ..... 1911

CARSON, W. W., Professor of Civil Engineering, University of Tennessee, Knoxville, Tenn. ..... 1894

CARTY, J. J., Chief Engineer, American Telephone and Telegraph Co., 15 Dey St., New York City ..... 1907

CAUGHEY, R. A., Instructor in Civil Engineering, Pennsylvania State College, State College, Pa. ..... 1911

CHAMBERS, S. D., Instructor in Mathematics, University of Maine, Orono, Me. ..... 1911

CHANDLER, C. A., Consulting Engineer, 24 Milk St., Boston, Mass.. 1902
CHANDLER, E. F., Professor of Mathematics in charge of Civil Engineering Course, University of North Dakota, University, N. D. 1907
CHARTERS, S. B., Jr., Asst. Professor of Electrical Engineering, Leland Stanford Junior University, Stanford University, Calif. 1911
CHASE, C. H., Professor of Steam Engineering, Tufts College, Tufts College, Mass. ..... 1900
CHASE, L. W., Head Professor of Agricultural Engineering, University of Nebraska, Lincoln, Nebr. ..... 1910
CHATBURN, G. R., Head Professor of Applied Mechanics and Machine Design, University of Nebraska, Lincoln, Neb. ..... 1899
CHESNEY, C. C., Manager and Chief Engineer, General Electric Co., Pittsfield, Mass. ..... 1911
CHITTENDEN, R. H., Director of the Sheffield Scientific School, Yale University, New Haven, Conn..... 1908
CHRISTENSEN, GEO. L., Assistant Professor of Mechanical Engineering, Michigan College of Mines, Houghton, Mich..... 1905
CHRISTY, S. B., Professor of Mining and Metallurgy, University of California, Berkeley, Calif. ..... 1893
CHURCH, E. F., JR., Professor of Machine Design and Construction, West Virginia University, Morgantown, W. Va. ..... 1910
CHURCH, I. P., Professor of Applied Mechanics and Hydraulics, College of Civil Engineering, Cornell University, Ithaca, N. Y. 1910
CHURCH, W. L., President and Consulting Engineer of the Ambursen Hydraulic Construction Co., 88 Pearl St., Boston, Mass. 1910
CLARK, J. J., Dean of the Faculty, International Correspondence Schools and Manager of the Textbook Department, International Textbook Co., Scranton, Pa..... 1906
CLEGHORN, M. P., Associate Professor of Mechanical Engineering, Iowa State College, Ames, Ia. ..... 1910
CLIFFORD, H. E., Professor of Electrical Engineering, Harvard University, Cambridge, Mass. ..... 1907
CLIFTON, H. T., Instructor in Physics, Pasadena High School, Pasadena, Calif. ..... 1907
CLOKE, PAUL, Assistant Professor in Electrical Engineering and Physics, Rhode Island State College, Kingston, R. I. ..... 1911
COBB, H. E., Professor and Head of Department of Mathematics, Lewis Institute, Chicago, Ill..... 1908
CODDINGTON, E. F., Associate Professor of Mechanics, Ohio State University, Columbus, Ohio..... 1911
COFFEEN, H. C., Special Agent, Northwestern Mutual Life Insurance Co., 900 The Rookery, Chicago, Ill. ..... 1910
COFFIN, C. A., President, General Electric Co., 145 W. 58th St., New York, N. Y..... 1911

COLPITTS, W. W., Chief Engineer, Kansas City, Mexico and Orient Railway, Kansas City, Mo. ..... 1910
COMSTOCK, C. E., Professor of Mathematics, Bradley Polytechnic Institute, Peoria, Ill. ..... 1909
COMSTOCK, E. H., Professor of Mechanics and Mathematics, School of Mines, University of Minnesota, Minneapolis, Minn. ..... 1907
COMSTOCK, F. M., Professor of Descriptive Geometry, Case School of Applied Science, Cleveland, O. ..... 1907
CONNELLEY, CLIFFORD B., Dean of the School of Applied Industries, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1907
CONRAD, L. E., Professor of Civil Engineering, Kansas State Agricultural College, Manhattan, Kan. ..... 1908
CONSTANT, F. H., Professor of Structural Engineering, University of Minnesota, Minneapolis, Minn. ..... 1896
CONVERSE, C. W., Asst. Professor of Electrical Engineering, University of Oregon, Eugene, Ore. ..... 1911
COOKE, MORRIS LLEWELLYN, Consulting Engineer, 401 W. Walnut Lane, Germantown, Philadelphia, Pa. ..... 1910
COOLEY, M. E., Professor of Mechanical Engineering and Dean of the Department of Engineering, University of Michigan, Ann Arbor, Mich. ..... 1893
CORNELL, W. R., Instructor in Applied Mechanics, Cornell University, Ithaca, N. Y. ..... 1910
CORP, C. I., Associate Professor of Mechanical Engineering, University of Kansas, Lawrence, Kan. ..... 1910
CORTHELL, E. L., Civil Engineer, 149 Broadway, New York, N. Y. .. 1895
COSTER, E. L., Literary Engineer, 25 Broad St., Rooms 1440–45, New York, N. Y. (Life Member) ..... 1911
COVELL, G. A., Dean of the School of Engineering and Mechanic Arts, Oregon Agricultural College, Corvallis, Ore. ..... 1908
COX, N. H., Professor of Civil Engineering, University of the State of Florida, Gainesville, Fla. ..... 1903
CRANDALL, C. L., Professor of Railroad Engineering, Cornell University, Ithaca, N. Y. ..... 1893
CRANE, H. G., Instructor in Electrical Engineering, Harvard University, Boston, Mass. ..... 1908
CRATHORNE, A. R., Associate in Mathematics, University of Illinois, Urbana, Ill. ..... 1911
CREAGMILE, WM. B., Assistant Professor of Experimental Electrical Engineering, Drexel Institute, Philadelphia, Pa. ..... 1909
CREIGHTON, E. E. F., Consulting Professor of Electrical Engineering, Union University, Schenectady, N. Y. ..... 1910
CREIGHTON, W. H. P., Dean of School of Technology and Professor of Mechanical and Sugar Engineering, Tulane University, New Orleans, La. ..... 1893

CRENSHAW, B. H., Professor of Mathematics, Alabama Polytechnic Institute, Auburn, Ala. ..... 1894
CROSBY, W. W., Chief Engineer, State Roads Commission of Maryland, 2850 N. Charles St., Baltimore, Md. ..... 1911
CROUCH, C. H., Professor of Mechanical Engineering and Dean of the College of Mechanical and Electrical Engineering, State University of North Dakota, Grand Forks, N. D. ..... 1907
CRUCHAGA OSSA, ENRIQUE, Castro 49, Santiago de Chile, South America ..... 1910
CURTIS, N. P., Instructor in Railway Engineering, University of Wisconsin, Madison, Wis. ..... 1909
CURTIS, W. W., Consulting Civil Engineer, 537 S. Dearborn St., Chicago, Ill. ..... 1910
CURTISS, CHAS. D., Instructor in Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1911
DAGGETT, P. H., Associate Professor of Electrical Engineering, Univ. of North Carolina, Chapel Hill, N. C. ..... 1910
DALAKER, H. H., Assistant Professor of Mathematics, University of Minnesota, Minneapolis, Minn. ..... 1909
DALBURG, F. A., Assistant Division of Mines, Bureau of Science, Manila, P. I. ..... 1908
DALTON, B. J., Associate Professor of Railway Enginering, University of Kansas, Lawrence, Kan. ..... 1907
DAMON, GEO. A., Engineer with Bion J. Arnold, Dean, Throop Polytechnic Institute, Pasadena, Calif. ..... 1911
DANFORTH, R. E., General Manager Public Service Railway Co., Newark, N. J. ..... 1910
DANIELS, JOSEPH, Assistant Professor of Mining Engineering, University of Washington, Seattle, Wash. ..... 1910
DATES, H. B., Professor of Electrical Engineering, Case School of Applied Science, Cleveland, O. ..... 1904
DAVIS, CHARLES HENRY, South Yarmouth, Mass. ..... 1911
DAVIS, E. W., Dean of College of Arts and Science and Head Professor of Mathematics, University of Nebraska, Lincoln, Neb. 1902
DAVIS, JAS. C., Instructor in Mechanical Drawing, Worcester Polytechnic Institute, Worcester, Mass. ..... 1909
DAVIS, JOHN C., Dean of the College of Applied Science and Engineering, Marquette University, Milwaukee, Wis. ..... 1908
DAVIS, N. F., Professor of Mathematics, Brown University, Providence, R. I. ..... 1910
DAVOUD, V. Y., Engineer, The Telluride Power Co., Provo, Utah.. 1911
DAWSON, F. M., Instructor in Civil Engineering, Nova Scotia Technical College, Halifax, N. S. ..... 1910
DAY, CHARLES, of the firm of Day and Zimmerman, Consulting Engineers, 608 Chestnut St., Philadelphia, Pa. ..... 1911

DEARBORN, C. S., Professor of Mechanical Engineering, Montana State College of Agriculture and Mechanic Arts, Bozeman, Mont. ..... 1910

DECHATELAIN, M. A., Professor of Electrical Engineering, Polytechnic Institute of St. Petersburg, St. Petersburg, Russia.... 1910

DEEDS, EDW. A., Vice-President, National Cash Register Co., Dayton, O. ..... 1911

DEFOE, L. M., Professor of Mechanics, University of Missouri, Columbia, Mo. ..... 1904

DEIMEL, R. F., Assistant Professor of Mechanics, Stevens Institute of Technology, Hoboken, N. J. ..... 1909

DELAY, F. A., Professor of Physics and Electrical Engineering, State Agricultural College of Colorado, Fort Collins, Colo. .... 1909

DENISON, C. S., Professor of Stereotomy, Mechanism and Drawing, University of Michigan, Ann Arbor, Mich. ..... 1893

DENNIS, L. M., Professor of Inorganic Chemistry, and Head of Dept. of Chemistry, Cornell University, Ithaca, N. Y. ..... 1910

DENT, J. A., Instructor in Mechanical Engineering, University of Illinois, Urbana, Ill. ..... 1911

DENTON, F. W., General Manager of Mines, Copper Range Consolidated Co., Painesdale, Mich. ..... 1894

DENTON, J. E., Emeritus Professor of Engineering Practice, Stevens Institute of Technology, Hoboken, N. J. ..... 1893

DEPUY, C. E., Professor of Machine Construction, Lewis Institute, Chicago, Ill. ..... 1908

DERLETH, CHAS., JR., Professor of Civil Engineering and Dean of the College of Civil Engineering, University of California, Berkeley, Calif. ..... 1904

DICKINSON, W. E., Professor of Electrical Engineering, West Virginia University, Morgantown, W. Va. ..... 1909

DIEMER, HUGO, Professor of Industrial Engineering, Pennsylvania State College, State College, Pa. ..... 1902

DIETZ, J. W., Manager, Educational Department, Western Electric Co., Hawthorne Station, Chicago, Ill. ..... 1911

DIRKS, H. B., Mechanical Engineer, National Machine Works, 3811 N. Seeley Ave., Chicago, Ill. ..... 1908

DOHERTY, H. L., President, The Denver Gas and Electric Co., 60 Wall St., New York, N. Y. ..... 1904

DOOLEY, C. R., Educational Director, Westinghouse Electric and Mfg. Co., and President of the Casino Technical Night School, East Pittsburgh, Pa. ..... 1907

DORSEY, J. W., Lecturer in Electrical and Mechanical Engineering, University of Manitoba, Winnipeg, Man. ..... 1909

DOUGLAS, J. F. H., Instructor in Electrical Engineering, Cornell University, Ithaca, N. Y. ..... 1910

DOWNTON, C. E., Assistant Superintendent, Westinghouse Electric and Manufacturing Co., E. Pittsburgh, Pa. ..... 1909
DRANE, W. H., Professor of Mathematics and Engineering, Cumberland University, Lebanon, Tenn. ..... 1903
DRINKER, H. S., President, Lehigh University, South Bethlehem, Pa. 1905
DROWNE, H. B., Instructor in Highway Engineering, Columbia University, Room 210 Hartley Hall, New York City..... 1908
DU BOIS, A. D., Assistant Professor of Electrical Engineering, Purdue University, Lafayette, Ind. ..... 1911
DU BOIS, A. J., Professor of Civil Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1894
DUFOUR, F. O., Assistant Professor of Structural Engineering, University of Illinois, Urbana, Ill. ..... 1906
DUKES, R. G., Professor of Applied Mechanics, Purdue University, Lafayette, Ind. ..... 1907
DUNCAN, LOUIS, Consulting Electrical Engineer, 55 Liberty St., New York, N. Y. .....1904
DUNCAN, M. M., Agent, Cleveland Cliffs Iron Co., and Member Board of Control, Michigan College of Mines, Ishpeming, Mich. 1905
DUNKIN, W. V., Instructor in Mechanical Engineering, University of Illinois, Urbana, Ill. ..... 1908
DUNMORE, G. B., Assistant Professor of Engineering, Whitman College, Walla Walla, Wash. ..... 1911
DUNN, GANO, Vice-President, J. G. White & Co., Inc., 117 W. 58th St., New York, N. Y. ..... 1911
DUNSTAN, E. V., Assistant Professor of Civil Engineering, George Washington University, Washington, D. C. ..... 1909
DUPONT, T. C., Wilmington, Del. (Life Member) ..... 1910
DURAND, W. F., Professor of Mechanical Engineering, Leland Stanford Junior University, Stanford University, Calif. ..... 1899
DURKEE, P. W., Professor of Engineering, Acadia University, Wolfville, Nova Scotia..... 1911
DYSART, P. M., Head of Physics Dept., Pittsburgh Central High School, Pittsburgh, Pa. ..... 1911
EARLE, S. C., Professor of English (in the Engineering School), Tufts College, Mass. ..... 1909
EASBY, WM., JR., Professor of Municipal Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1908
EBAUGH, W. C., Professor of Chemistry, University of Utah, Salt Lake City, Utah ..... 1908
ECKHARD, G. F., Professor of Civil Engineering, James Millikin University, Decatur, Ill. ..... 1910
EDDY, C. L., Assistant Professor of Railway Engineering, Case School of Aplied Science, Cleveland, O. ..... 1910

EDDY, H. T., Dean of the Graduate School and Professor in charge of Mathematics and Mechanics, College of Engineering, University of Minnesota, Minneapolis, Minn. ..... 1893

EDMANDS, SAMUEL S., Director, School of Science and Technology, Pratt Institute, Brooklyn, N. Y. ..... 1903

EDWARDS, E. J., Associate Engineer, Engineering Department, National Electric Lamp Association, Cleveland, O. ..... 1911

EGBERT, H. V., Assistant Professor in Mechanics and Materials of Construction, Pennsylvania State College, State College, Pa.... 1907

EINSTEIN, A. C., General Manager, Union Electric Light and Power Co., St. Louis, Mo. ..... 1911

ELLIOTT, J. W., Assistant Professor of Civil Engineering, University of Vermont, Burlington, Vt. ..... 1908

ELLIS, W. T., Assistant Professor of Mechanical Engineering, North Carolina A. and M. College, West Raleigh, N. C. ..... 1910

EMERSON, WM. H., Dean and Professor of Chemistry, Georgia School of Technology, Atlanta, Ga. ..... 1912

EMORY, F. L., Professor of Mechanics and Applied Mathematics, West Virginia University, Morgantown, W. Va. ..... 1894

ENDERS, H. C., Assistant Professor of Chemistry, Cooper Union, New York, N. Y. ..... 1908

ENDSLEY, L. E., Professor of Railway Mechanical Engineering, Purdue University, Lafayette, Ind. ..... 1907

ENGER, M. L., Assistant Professor in Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill. ..... 1907

ENNIS, W. D., Professor of Mechanical Engineering, Polytechnic Institute of Brooklyn, Brooklyn, N. Y. ..... 1907

ENO, F. H., Professor of Municipal Engineering, Ohio State University, Columbus, O. ..... 1907

ESTY, WILLIAM, Professor of Electrical Engineering, Lehigh University, South Bethlehem, Pa. ..... 1898

EVANS, F. H., Instructor in Manual Arts, Bradley Polytechnic Institute, Peoria, Ill. ..... 1907

EVANS, H. B., Professor of Mathematics, University of Pennsylvania, Philadelphia, Pa. ..... 1908

EVANS, H. S., Professor of Electrical Engineering, University of Colorado, Boulder, Colo. ..... 1905

EVANS, P. N., Professor of Chemistry and Director of the Chemical Laboratory, Purdue University, Lafayette, Ind. ..... 1908

EVINGER, M. I., Assistant Professor of Civil Engineering, Iowa State College, Ames, Ia. ..... 1909

EWING, D. D., Professor of Electrical and Mechanical Engineering, Ohio Northern University, Ada, O. ..... 1910

EYRE, T. T., Instructor in Applied Mechanics, Purdue University, W. Lafayette, Ind. ..... 1909

FAIG, J. T., Professor of Mechanical Engineering, University of Cincinnati, Cincinnati, O. ..... 1899

FARNHAM, C. S., Assistant Professor of Civil Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1908

FARWELL, S. P., Instructor in Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill. ..... 1911

FERGUSON, O. J., Associate Professor of Electrical Engineering, Union University, Schenectady, N. Y. ..... 1908

FERMIER, E. J., Professor of Mechanical Engineering, Texas A. and M. College, College Station, Texas ..... 1903

FERNALD, R. H., Professor of Mechanical Engineering, Case School of Applied Science, Cleveland, O. ..... 1899

FINE, H. B., Professor of Mathematics, Dean of the Faculty and Dean of the Departments of Science, Princeton University, Princeton, N. J. ..... 1909

FISH, F. A., Professor of Electrical Engineering, Iowa State College, Ames, Ia. ..... 1905

FISHER, GEO. H., Manager, International Correspondence Schools, Scranton, Pa. ..... 1911

FISHER, JAMES, JR., Professor of Mathematics and Physics, Michigan College of Mines, Houghton, Mich. ..... 1899

FISHER, R. T., Chairman of the Division of Forestry, Harvard University, Cambridge, Mass. ..... 1910

FITZGERALD, DESMOND, Consulting Engineer, 410 Washington St., Brookline, Mass. ..... 1911

FLATHER, J. J., Professor of Mechanical Engineering, University of Minnesota, Minneapolis, Minn. ..... 1893

FLEMING, V. R., Associate in Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill. ..... 1909

FLETCHER, ROBERT, Professor of Civil Engineering, Director of Thayer School of Civil Engineering, Dartmouth College, Hanover, N. H. ..... 1894

FLOWERS, A. E., Assistant Professor of Electrical Engineering, University of Missouri, Columbia, Mo. ..... 1910

FOCKE, T. M., Kerr Professor of Mathematics, Case School of Applied Science, Cleveland, O. ..... 1907

FOGG, R. J., Assistant Professor in Civil Engineering, Lehigh University, South Bethlehem, Pa. ..... 1910

FOOTE, F. S., JR., Associate in Railway Civil Engineering, University of Illinois, Urbana, Ill. ..... 1910

FORD, A. H., Professor of Electrical Engineering, State University of Iowa, Iowa City, Ia. ..... 1903

FORD, H. C., Associate Professor of Civil Engineering, Iowa State College, Ames, Ia. ..... 1907

FOSS, F. E., Professor of Civil Engineering, Cooper Union, New York City. ..... 1893

FOSS, M. M., Secretary of the McGraw-Hill Book Co., 239 W. 39th St., New York City..... 1909

FOSTER, E. S., Instructor in Electrical Engineering, Lehigh University, S. Bethlehem, Pa. ..... 1911

FRANKEL, L. K., Professor of Machine Design, State University of Kentucky, Lexington, Ky. ..... 1909

FRANKFORTER, G. B., Professor of Chemistry and Dean of the School of Chemistry, University of Minnesota, Minneapolis, Minn. ..... 1897

FRANKLIN, W. S., Professor of Physics, Lehigh University, South Bethlehem, Pa. ..... 1900

FRARY, H. D., Engineer and Scientist, Carnegie Institution, Washington, D. C. ..... 1908

FREAR, J. B., Assistant Instructor in Farm Mechanics, University of Minnesota, State Farm, St. Paul, Minn..... 1911

FREEDMAN, W. H., Head of Applied Electricity, Pratt Institute, Brooklyn, N. Y. ..... 1902

FREEMAN, E. H., Professor of Electrical Engineering, Armour Institute of Technology, Chicago, Ill. ..... 1909

FREEMAN, WILLIAM E., Professor of Electrical Engineering, University of Kentucky, Lexington, Ky. ..... 1911

FRENCH, A. W., Professor of Civil Engineering, Worcester Polytechnic Institute, Worcester, Mass. ..... 1900

FRENCH, THOS. E., Professor of Engineering Drawing, Ohio State University, Columbus, O. ..... 1899

FRINK, F. G., Professor of Railway Engineering, University of Oregon, Eugene, Ore. ..... 1902

FRITH, A. J., Associate Professor of Mechanical Engineering, Armour Institute of Technology, Chicago, Ill. ..... 1911

FROST, A. E., Registrar of the University and Professor of Mathematics, University of Pittsburgh, Pittsburgh, Pa. ..... 1908

FROST, F. W., Treasurer, Suffern & Co., 96 Wall St., New York, N. Y. ..... 1911

FROST, HARWOOD, Room 704, 226 LaSalle St., Chicago, Ill..... 1907

FRY, LAWFORD H., Technical Representative in Europe, Baldwin Locomotive Works, 34 Victoria St., London, S. W., England.. 1911

FULLER, A. H., Professor of Civil Engineering and Dean of the College of Engineering, University of Washington, Seattle, Wash. 1901

FULLER, C. E., Associate Professor of Mechanical Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1907

FURMAN, FRANKLIN DER., Professor of Mechanism and Machine Design, Stevens Institute of Technology, Hoboken, N. J. ..... 1907

GALBRAITH, JOHN, Professor of Engineering and Dean of the Faculty of Applied Science, University of Toronto, Toronto, Ontario. ..... 1893

GANZ, ALBERT F., Professor of Electrical Engineering, Stevens Institute of Technology, Hoboken, N. J. ..... 1903

GARDNER, HENRY, Assistant Superintendent of Apprentices, 2623 Grand Central Terminal, New York City..... 1911

GARMAN, H. O., Associate Professor of Civil Engineering, Purdue University, Lafayette, Ind..... 1907

GARRETT, L. E., Assistant Professor of Mathematics, Missouri School of Mines and Metallurgy, Rolla, Mo. ..... 1910

GARRISON, W. A., Assistant Professor of Engineering Mathematics, Union University, Schenectady, N. Y. ..... 1908

GARVER, N. B., Instructor in Civil Engineering, University of Illinois, Urbana, Ill..... ..... 1910

GAVETT, G. I., Assistant Professor of Mathematics, University of Washington, Seattle, Wash. ..... 1907

GAY, R. W., Professor of Civil Engineering, Mississippi A. and M. College, Agricultural College, Miss. ..... 1907

GEHRING, H. A., Assistant Engineer, Bureau of Lock Designing, N. Y. State Barge Canal Office, Albany, N. Y. ..... 1907

GEIER, F. A., President, The Cincinnati Milling Machine Co., Oakley, Cincinnati, O. ..... 1911

GERHARD, W. P., Consulting Engineer for Hydraulic and Sanitary Works, 39 Strong Place, Brooklyn, N. Y. ..... 1911

GIBSON, A. J., Professor of Engineering, Univ. of Queensland, Brisbane, Queensland, Australia..... 1910

GIBSON, J. L., Professor of Mathematics, University of Utah, Salt Lake City, Utah ..... 1911

GIESECKE, F. E., Professor of Architectural Engineering and Drawing, Texas A. and M. College, College Station, Texas..... 1893

GILBRETH, F. B., President, F. B. Gilbreth, Inc., 60 Broadway, New York City ..... 1911

GILCHRIST, J. F., Assistant to the President, Commonwealth Edison Co., Chicago, Ill. ..... 1911

GILL, A. H., Supt. of the Power Dept., Perth Amboy Plant, Amer. Smelting & Refining Co., Perth Amboy, N. J. ..... 1909

GILL, J. H., Director of Columbus Trades School, Columbus, O.... 1896

GILLESPIE, PETER, Associate Professor of Applied Mechanics, University of Toronto, Toronto, Ontario ..... 1905

GILLETTE, H. P., Editor in Chief, Engineering & Contracting, 537 S. Dearborn St., Chicago, Ill. ..... 1905

GLADSON, W. N., Professor of Electrical Engineering, University of Arkansas, Fayetteville, Ark. ..... 1903

GOETZE, FREDERICK A., Dean, Schools of Mines, Engineering and Chemistry, Columbia University, New York, N. Y. ..... 1906

GOLDINGHAM, A. H., Sales Engineer, De la Vergne Machine Co., New York City ..... 1911

GOLDMARK, HENRY, Designing Engineer, Isthmian Canal Commission, Culebra, Canal Zone, Panama..... 1910

GOODENOUGH, G. A., Professor of Thermodynamics, University of Illinois, Urbana, Ill. ..... 1900

GOSS, W. F. M., Dean of the College of Engineering and Director of the Engineering Experiment Station, University of Illinois, Urbana, Ill. ..... 1893

GRAMLICH, J. E., Associate Professor of Industrial Engineering, Syracuse University, Syracuse, N. Y. ..... 1910

GRANT, E. D., Assistant Professor of Mathematics and Physics, Michigan College of Mines, Houghton, Mich. ..... 1905

GRAY, H. W., Assistant Professor of Experimental Civil Engineering, Iowa State College of Agriculture and Mechanic Arts, Ames, Ia. ..... 1910

GREEN, C. A., Professor of History and Economics, Polytechnic Institute of Brooklyn, Brooklyn, N. Y..... 1910

GREENE, A. M., JR., Professor of Mechanical Engineering, Rensselaer Polytechnic Institute, Troy, N. Y. ..... 1903

GREGORY, W. B., Professor of Experimental Engineering, Tulane University, and Irrigation Engineer, U. S. Department of Agriculture, New Orleans, La. ..... 1907

GREINER, J. E., Consulting Engineer, Fidelity Bldg., Baltimore, Md. 1911

GREMPLE, CHAS. W., Instructor in Mechanical Drawing, University of Pennsylvania, Philadelphia, Pa. ..... 1911

GRIMM, C. R., Standish Arms, 169 Columbia Heights, Brooklyn, N. Y. ..... 1911

GROAT, B. F., Hydraulic Engineer, St. Lawrence River Power Co., Massena, N. Y. ..... 1899

GROVER, N. C., 1330 F St., N. W., Washington, D. C..... 1894

GUNNESS, C. I., Assistant Professor of Mechanical Engineering, North Dakota Agricultural College, Agricultural College, N. D. 1910

GUNTHER, C. O., Professor of Mathematics, Stevens Institute of Technology, Hoboken, N. J. ..... 1907

HABERMEYER, G. C., Associate in Municipal and Sanitary Engineering, University of Illinois, Urbana, Ill. ..... 1911

HAGERTY, C. T., Professor of Mathematics and Astronomy, New Mexico College of A. & M. Arts, Agricultural College, New Mexico ..... 1911

HALL, E. H., Professor of Physics, Harvard University, Cambridge, Mass. ..... 1910

HALLSTED, J. C., Engineer, Robert W. Hunt Co., Chicago, Ill. ..... 1910
HALSEY, F. A., Editor Emeritus, American Machinist, 505 Pearl St., New York, N. Y. ..... 1907
HAMERSCHLAG, A. A., Director, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1903
HAMILTON, GEO. A., 532 Morris Ave., Elizabeth, N. J. ..... 1911
HAMILTON, J. O., Professor of Physics, Kansas State Agricultural College, Manhattan, Kan. ..... 1910
HARAHAN, W. J., Vice-President, Erie Railroad Co., Montclair, N. J. ..... 1911
HARDING, C. F., Professor of Electrical Engineering and Director of the Electrical Laboratory, Purdue University, Lafayette, Ind.. 1908
HARING, ALEXANDER, Professor of Bridge and Railway Engineering, New York University, New York, N. Y. ..... 1907
HARPER, A. C., Instructor in Engineering Drawing, Ohio State University, Columbus, O. ..... 1911
HARPER, C. H., Instructor in Drawing and Mathematics, Chestnut Hill Academy, Chestnut Hill, Pa. ..... 1909
HARRINGTON, J. L., Consulting Bridge Engineer, Waddell & Harrington, Kansas City, Mo. ..... 1903
HARRIS, F. C., Instructor in Architecture and Drawing, Kansas State Agricultural College, Manhattan, Kas. ..... 1910
HARTER, G. A., President, Delaware College, Newark, Del. ..... 1908
HARTMANN, F. M., Professor of Physics and of Electrical and Mechanical Engineering, Cooper Union, New York, N. Y. ..... 1908
HASKELL, E. E., Director of the College of Civil Engineering, Cornell University, Ithaca, N. Y. ..... 1907
HASKELL, M. W., Professor of Mathematics, University of California, Berkeley, Cal. ..... 1910
HASKINS, C. N., Assistant Professor of Mathematics, Dartmouth College, Hanover, N. H. ..... 1909
HASTINGS, H. B., Professor of Surveying and Drawing, Reed College, Portland, Ore. ..... 1908
HATT, W. K., Professor of Civil Engineering and Director of the Materials Testing Laboratory, Purdue University, Lafayette, Ind. ..... 1895
HAULTAIN, H. E. T., Professor of Mining Engineering, University of Toronto, Toronto, Canada ..... 1911
HAVILAND, EDWIN, with the Seattle Lighting Co., Seattle, Wash. ... 1902
HAWES, J. H., Teacher of Manual Training and Mechanical Drawing, Dorchester High School, Dorchester Center, Mass. ..... 1900
HAWLEY, J. B., Consulting Engineer, Hoxie Bldg., Ft. Worth, Tex. 1911
HAYFORD, J. F., Director of the College of Engineering, Northwestern University, Evanston, Ill. ..... 1905

HAYNES, A. E., Professor of Engineering Mathematics, University of Minnesota, Minneapolis, Minn. ..... 1895
HAYWARD, H. W., Assistant Professor of Applied Mechanics, Massachusetts Institute of Technology, Boston, Mass. ..... 1904
HAZELTINE, L. A., Instructor in Electrical Engineering, Stevens Institute of Technology, Hoboken, N. J. ..... 1910
HECK, R. C. H., Professor of Mechanical Engineering, Rutgers College, New Brunswick, N. J. ..... 1907
HEDRICK, E. R., Professor of Mathematics, University of Missouri, Columbia, Mo. ..... 1910
HEDRICK, I. G., Consulting Engineer, 1118 McGee St., Kansas City, Mo. ..... 1903
HEIDENGER, H. W., Instructor in Mechanical Engineering, University Extension Division, University of Wisconsin, Oshkosh, Wis. ..... 1910
HENDERER, W. O., President, The Osborn Engineering Co., Cleveland, O. ..... 1910
HENDRICK, A. W., Dean of Whitman College, Walla Walla, Wash. 1908
HENLEY, W. W., Professor of Mechanic Arts, University of Arizona, Tucson, Ariz. ..... 1907
HENRY, P. W., Consulting Engineer, 506–25 Broad St., New York City ..... 1911
HERGET, A. M., Professor of Drawing and Mechanic Arts, Louisiana State University, Baton Rouge, La. ..... 1903
HERING, RUDOLPH, Hydraulic and Sanitary Consulting Engineer, 170 Broadway, New York, N. Y. ..... 1911
HERSCHEL, W. H., Assistant Professor of Mechanical Engineering, Univ. of Maine, Orono, Me. ..... 1911
HESS, HENRY, President, the Hess-Bright Mfg. Co., and the Hess Steel Castings Co., Philadelphia, Pa. ..... 1911
HEWERDINE, T. S., Civil Engineer, Box 161, Fisher, Ill. ..... 1907
HIBBARD, A. S., American Telephone & Telegraph Co., 15 Dey St., New York, N. Y. ..... 1907
HIBBARD, H. WADE, Professor of Mechanical Engineering, University of Missouri, Columbia, Mo. ..... 1896
HIGBEE, F. G., Professor and Head of the Department of Descriptive Geometry and Drawing, State University of Iowa, Iowa City, Ia. ..... 1906
HIGBIE, H. H., Assistant Professor in Electrical Engineering, University of Michigan, Ann Arbor, Mich. ..... 1908
HILL, J. E., Professor of Civil Engineering, Brown University, Providence, R. I. ..... 1894
HILLEBRAND, W. A., Professor of Electrical Engineering, Oregon Agricultural College, Corvallis, Ore. ..... 1910

HIROI, ISAMI, Professor of Civil Engineering, Tokyo Imperial University, College of Engineering, Tokyo, Japan..... 1910
HITCHCOCK, E. A., Professor of Experimental Engineering, Ohio State University, Columbus, O..... 1899
HITCHCOCK, G. G., Professor of Physics, Pomona College, Claremont, Calif. ..... 1911
HIXON, C. R., Instructor in Mechanical Engineering, Alabama Polytechnic Institute, Auburn, Ala..... 1910
HOAD, W. C., Professor of Civil Engineering, University of Kansas, Lawrence, Kas. ..... 1907
HOAGLAND, I. G., Editor and Manager, Insurance Engineering, 120 Liberty St., New York City ..... 1912
HOBART, H. M., Consulting Engineer, General Electric Co., Schenectady, N. Y. ..... 1912
HODGKINS, H. L., Dean of the College of Engineering and Mechanic Arts, George Washington University, Washington, D. C. .... 1908
HOEFER, E. G., Professor of Mechanical Engineering, University of Wyoming, Laramie, Wyo..... 1910
HOFFMAN, A. H., Associate Professor of Physics, Iowa State College of Agriculture and Mechanic Arts, Ames, Ia..... 1907
HOFFMAN, J. D., Head Professor of Mechanical Engineering and Practical Mechanics, University of Nebraska, Lincoln, Nebr... 1907
HOFMAN, H. O., Professor of Metallurgy, Massachusetts Institute of Technology, Boston, Mass. ..... 1894
HOLDEN, C. A., Professor of Civil Engineering, Thayer School of Civil Engineering, Dartmouth College, Hanover, N. H..... 1901
HOLDEN, E. C., Professor of Mining and Metallurgy, University of Wisconsin, Madison, Wis. ..... 1909
HOLLIS, I. N., Professor of Engineering, Harvard University, Cambridge, Mass. ..... 1894
HOLLISTER, V. L., Adjunct Professor of Electrical Engineering, University of Nebraska, Lincoln, Nebr. ..... 1911
HOLMES, J. A., Director, Bureau of Mines, Washington, D. C..... 1907
HOLT, T. P., Assistant Professor in Mining and Milling, University of Utah, Salt Lake City, Utah ..... 1911
HOOD, O. P., Chief Mechanical Engineer, U. S. Bureau of Mines, 40th & Butler Sts., Pittsburgh, Pa..... 1893
HOOPER, E. G., Instructor of Civil Engineering, Washington University, St. Louis, Mo. ..... 1909
HOOPER, W. L., Professor of Electrical Engineering, Tufts College, Tufts College, Mass. ..... 1907
HOSKINS, L. M., Professor of Applied Mathematics, Leland Stanford, Jr. University, Stanford Univ., Cal. ..... 1893

HOUGHTON, C. E., Associate Professor Mechanical Engineering, New York University, New York, N. Y. ..... 1908
HOWARD, J. W., Instructor in Civil Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1907
HOWE, C. S., President of the Case School of Applied Science, Cleveland, O. ..... 1902
HOWE, M. A., Professor of Civil Engineering, Rose Polytechnic Institute, Terre Haute, Ind. ..... 1894
HUBBARD, A. K., 5745 Ellsworth Ave., Pittsburgh, Pa. ..... 1907
HUBBARD, J. C., Professor of Physics, Clark College, Worcester, Mass. ..... 1910
HUBBARD, L. L., Mine Manager, Houghton, Mich. ..... 1911
HUDSON, C. W., Professor of Civil Engineering, Polytechnic Institute of Brooklyn, Brooklyn, N. Y..... 1909
HUGHES, H. J., Assistant Professor of Civil Engineering, Harvard University, Cambridge, Mass. ..... 1907
HUGHES, J. W., Civil Engineer, Pennsylvania General Electric Co., Erie, Pa. ..... 1907
HUME, ALFRED, Vice-Chancellor and Professor of Mathematics, University of Mississippi, University, Miss..... 1894
HUMPHREYS, A. C., President, Stevens Institute of Technology, Hoboken, N. J. ..... 1903
HUMPHREYS, D. C., Dean of the School of Engineering and Professor of Civil Engineering, Washington and Lee University, Lexington, Va. ..... 1893
HUNT, CHAS. WARREN, Secretary, the American Society of Civil Engineers, 220 W. 57th St., New York, N. Y. ..... 1911
HUNT, G. H., Instructor in Mechanical Drawing and Descriptive Geometry, Case School of Applied Science, Cleveland, O. ..... 1911
HUNT, J. H., Associate Professor Electrical Engineering, Ohio State University, Columbus, O. ..... 1908
HUNTER, J. A., Professor of Mechanical Engineering, University of Colorado, Boulder, Colo. ..... 1904
HUNTINGTON, E. V., Assistant Professor of Mathematics, Harvard University, Cambridge, Mass. ..... 1906
HUNTOON, L. D., Consulting Mining Engineer, 52 Broadway, New York City. ..... 1908
HUTTON, S. E., Works Manager, Idaho National Harvester Co., Ltd., Moscow, Ida. ..... 1907
HYDE, A. LINCOLN, Assistant Professor of Bridge Engineering, University of Missouri, Columbia, Mo..... 1904
HYDE, E. P., Director Physical Laboratory, National Electric Lamp Association, Cleveland, O. ..... 1911

INGRAM, E. L., Professor of Railroad Engineering and Geodesy, University of Pennsylvania, Philadelphia, Pa. ..... 1908

IVES, F. W., Instructor in Engineering Drawing, Ohio State University, Columbus, O. ..... 1910

IVES, H. C., Assistant Professor of Railroad Engineering, Worcester Polytechnic Institute, Worcester, Mass. ..... 1901

IYER, R. P., Supervisor, Public Works Department, Parlakemidi, P. O., Ganjam District, Deccan, India ..... 1910

JABLOW, CHARLES, Assistant in Mechanical Drawing and Machine Design, Kansas State Agricultural College, Manhattan, Kas.. 1910

JACKSON, DUGALD C., Professor of Electrical Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1893

JACKSON, JOHN PRICE, Dean of School of Engineering, Pennsylvania State College, State College, Pa. ..... 1894

JACOBUS, D. S., Advisory Engineer, The Babcock & Wilcox Co., and Special Lecturer in Experimental Engineering, Stevens Institute of Technology, New York, N. Y. ..... 1893

JACOBY, H. S., Professor of Bridge Engineering, Cornell University, Ithaca, N. Y. ..... 1894

JAMES, J. H., Professor of Chemical Engineering, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1910

JAMESON, J. M., Head of Department of Physics, Pratt Institute, Brooklyn, N. Y. ..... 1903

JARRETT, E. S., Vice-President and Treasurer, The Foundation Co., 115 Broadway, New York, N. Y. ..... 1910

JENKINS, A. LEWIS, Associate Professor of Mechanical Engineering, University of Cincinnati, Cincinnati, O. ..... 1907

JENSON, JOSEPH, Consulting Engineer, Office of State Engineer, Salt Lake City, Utah ..... 1903

JEWETT, A. C., Professor of Mechanical Engineering, University of Maine, Orono, Me. ..... 1907

JOBSON, A. J., Superintendent Bear Lake Construction for the Telluride Power Co., P. O. Box 221, Montpelier, Idaho..... 1910

JOHNSON, A. R., Assistant Professor in Mathematics and Graphics, Rutgers College, New Brunswick, N. J. ..... 1909

JOHNSON, J. S. A., Professor of Experimental Engineering, Virginia Polytechnic Institute, Blacksburg, Va. ..... 1907

JOHNSON, L. J., Professor of Civil Engineering, Harvard University, Cambridge, Mass. ..... 1898

JOHNSON, PHELPS, Vice-President and General Manager, Dominion Bridge Co., Montreal, Canada..... 1910

JOHNSTON, W. A., Associate Professor of Mechanical Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1907

JONES, BASSETT, JR., Consulting Engineer, 1 Madison Ave., New York, N. Y. ..... 1904

JONES, C. R., Dean of the College of Engineering and Professor of Mechanical Engineering, West Virginia University, Morgantown, W. Va. ..... 1895

JONES, FORREST R., Mechanical and Electrical Engineer, 1702 Melrose Place, Knoxville, Tenn. ..... 1893

JONES, F. S., Dean of Yale College, New Haven, Conn. ..... 1903

JUDD, HORACE, Associate Professor of Experimental Engineering, Ohio State University, Columbus, O. ..... 1907

KARAPETOFF, VLADIMIR, Professor of Electrical Engineering, Cornell University, Ithaca, N. Y. ..... 1909

KAULFUSS, J. E., Instructor in Civil Engineering, University of Maine, Orono, Me. ..... 1910

KAVANAUGH, W. H., Professor of Experimental Engineering, University of Minnesota, Minneapolis, Minn. ..... 1902

KAY, E. B., Dean of the College of Engineering and Professor of Civil Engineering, University of Alabama, University, Ala. .. 1898

KEELY, R. R., Industrial Engineer, 1702 Mt. Vernon St., Philadelphia, Pa. ..... 1910

KELLER, A. R., McKinley St. & Lanihuli Drive, Honolulu, T. H. .... 1910

KELLEY, HOWARD G., Vice-President, Grand Trunk Railway System, Montreal, P. Q., Canada ..... 1910

KELLOGG, O. D., Professor of Mathematics, University of Missouri, Columbia, Mo. ..... 1910

KELLY, WILLIAM, Chairman, Board of Control, Michigan College of Mines, Vulcan, Mich. ..... 1905

KELSALL, G. A., Instructor in Electrical Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1911

KENERSON, W. H., Associate Professor of Mechanical Engineering, Brown University, Providence, R. I. ..... 1903

KENNEDY, F. L., Assistant Professor of Drawing and Machine Design, Harvard University, Cambridge, Mass. ..... 1904

KENNEDY, W. A., Testing Engineer, General Fire Extinguisher Company, 31 Forest St., Providence, R. I. ..... 1910

KENT, J. M., Instructor in Steam and Electricity, Manual Training High School, Kansas, City, Mo. ..... 1903

KENT, WILLIAM, Consulting Engineer, 49 Union St., Montclair, N. J. ..... 1894

KENYON, A. M., Professor of Mathematics, Purdue University, Lafayette, Ind. ..... 1908

KEOWN, R. McA., Assistant Professor of Machine Design, University of Wisconsin, Madison, Wis. ..... 1910

KERR, E. W., Professor of Mechanical Engineering, Louisiana State University, Baton Rouge, La. ..... 1910

KETCHUM, MILO S., Dean of the College of Engineering and Professor of Civil Engineering, University of Colorado, Boulder, Colo. 1903

KIDD, J. W., Associate Professor of Physics, Texas Agricultural and Mechanical College, College Station, Texas. ..... 1908

KING, E. E., Associate Professor of Railway Engineering, Iowa State College, Ames, Ia. ..... 1908

KING, R. S., General Delivery, Savannah, Ga. ..... 1904

KINGSBURY, ALBERT, Consulting Engineer, 219 Stratford Ave., Pittsburgh, Pa. ..... 1893

KINSLEY, CARL, Associate Professor of Physics, University of Chicago, Chicago, Ill. ..... 1903

KIRBY, RICHARD S., Professor of Civil Engineering, Pennsylvania College, Gettysburg, Pa. ..... 1911

KIRCHER, F. J., Instructor in Mechanical Engineering, University of Minnesota, Minneapolis, Minn. ..... 1911

KIRCHNER, W. H., Professor of Drawing and Descriptive Geometry, University of Minnesota, Minneapolis, Minn. ..... 1910

KLEIN, A. W., Associate Professor of Mechanical Engineering, Lehigh University, South Bethlehem, Pa. ..... 1908

KNIGHT, C. D., Assistant Professor of Experimental Electrical Engineering, Worcester Polytechnic Institute, Worcester, Mass. 1907

KNIGHT, W. A., Associate Professor of Machine Shop Practice, Ohio State University, Columbus, O. ..... 1907

KNIPP, C. T., Assistant Professor of Physics, University of Illinois, Urbana, Ill. ..... 1907

KNOCH, J. J., Professor of Civil Engineering, University of Arkansas, Fayetteville, Ark. ..... 1898

KNOTT, V. P., Associate Professor of Civil Engineering, University of Arkansas, Fayetteville, Ark. ..... 1909

KNOWLTON, A. A., Associate Professor in Physics, University of Utah, Salt Lake City, Utah ..... 1911

KOCH, E. H., JR., Instructor in Mathematics, Pratt Institute, Brooklyn, N. Y. ..... 1904

KOESTER, FRANK, Consulting Engineer, 115 Broadway, New York, N. Y. ..... 1910

KONDO, SENTARO, Engineer, Department of Public Works, Tokyo District, Doboku Shitchojo, Naimusho, Tokyo, Japan ..... 1911

KONDO, TORAGORO, Chief of Technical Division, Home Department, Public Works Bureau, 10 Nichi-Katamachi, Komagome, Tokyo, Japan (Life Member) ..... 1911

KOTTCAMP, J. P., Instructor in Steam and Strength of Materials, Pratt Institute, Brooklyn, N. Y. ..... 1909

KUNZE, E. J., Assistant Professor of Mechanical Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1907

LAHMER, J. A., Principal Assistant Engineer, The Kansas City Southern Railway Co., Kansas City, Mo. ..... 1910

LAMBERT, B. J., Professor of Structural Engineering, State University of Iowa, Iowa City, Ia. ..... 1907

LAMBERT, P. A., Professor of Mathematics, Lehigh University, South Bethlehem, Pa. ..... 1897

LAMKE, G. W., Assistant Professor of Electrical Engineering, Washington University, St. Louis, Mo. ..... 1910

LANDRETH, O. H., Professor of Civil Engineering, Union University, Schenectady, N. Y. ..... 1893

LANE, F. W., Editor, National Land & Irrigation Journal, 5909 Calumet Ave., Chicago, Ill. ..... 1911

LANGSDORF, A. S., Dean of the School of Engineering and Professor of Electrical Engineering, Washington University, St. Louis, Mo. ..... 1903

LANZA, GAETANO, The Montevista, 63d & Oxford Sts., Philadelphia, Pa. ..... 1893

LARSON, G. L., Associate Professor of Mechanical Engineering, University of Idaho, Moscow, Idaho ..... 1911

LAWRANCE, C. H., Instructor in Mechanics, Purdue University, Lafayette, Ind. ..... 1906

LAWRENCE, C. W., Professor of Civil Engineering, University of Southern California, Los Angeles, Cal. ..... 1909

LAWRENCE, J. W., Professor of Mechanical Engineering, State Agricultural College, Fort Collins, Colo. ..... 1898

LAWRENCE, R. R., Associate Professor of Electrical Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1907

LAWRENCE, W. H., Professor of Architectural Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1907

LAWS, F. A., Associate Professor of Electrical Testing, Massachusetts Institute of Technology, Boston, Mass. ..... 1909

LAWTON, E. E., Professor of Physics, Denison University, Granville, O. ..... 1910

LEBARON, J. F., Consulting Engineer, Chardon, O. ..... 1910

LEETE, J. H., Dean of the School of Applied Science, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1907

LELAND, O. M., Assistant Professor of Astronomy and Geodesy, Cornell University, Ithaca, N. Y. ..... 1908

LEPAGE, CLIFFORD B., Assistant Professor of Physics, Stevens Institute of Technology, Hoboken, N. J. ..... 1908

LEUTWILER, O. A., Assistant Professor of Machine Design, University of Illinois, Urbana, Ill. ..... 1906

LEWIS, BROTHER HUBERT, Associate Professor in Engineering, Christian Brothers College, St. Louis, Mo. ..... 1911

LIEB, J. W., JR., Third Vice-President, The New York Edison Co., 55 Duane St., New York, N. Y. ..... 1911

LINCOLN, P. M., Electrical Engineer, Westinghouse Electric & Mfg. Co., Pittsburgh, Pa. ..... 1911

LINDEMANN, C. A., Professor of Applied Mathematics, Bucknell University, Lewisburg, Pa. ..... 1905

LINVILLE, C. P., Associate Professor of Metallurgy, School of Mines, Pennsylvania State College, State College, Pa..... 1904

LITTLE, C. N., Professor of Civil Engineering, University of Idaho, Moscow, Idaho..... 1907

LOCKWOOD, E. H., Assistant Professor of Mechanical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. 1908

LODGE, W. L., Assistant Professor of Physics, Michigan State Agricultural College, East Lansing, Mich..... 1908

LONG, J. J., Instructor in Mechanical Drawing, Brown University, Providence, R. I..... 1911

LONGYEAR, J. M., Member Board of Control, Michigan College of Mines, Marquette, Mich. ..... 1905

LORY, C. A., President, State Agricultural College of Colorado, Fort Collins, Colo. ..... 1908

LOVE, A. C., General Superintendent, Beaumont Irrigating Co., Beaumont, Texas ..... 1900

LOVELACE, B. F., Professor of Chemistry, University of Alabama, University, Ala. ..... 1911

LUCKE, C. E., Professor of Mechanical Engineering and Head of Dept., Columbia University, New York, N. Y. ..... 1906

LUDERITZ, JOAO, Engenheiro Chefo-Instituto Technico Professional, Porto Alegre, Brazil ..... 1909

LUDY, L. V., Acting Professor of Steam and Gas Engineering, University of Wisconsin, Madison, Wis. ..... 1903

LUND, JACOB, Supt. Heat and Power Dept., Kansas State Agricultural College, Manhattan, Kan. ..... 1910

LUND, JAS. C., Assistant in General Engineering Drawing, University of Illinois, Urbana, Ill..... 1910

LUNDGREN, E. L., Project Engineer, Bureau of Public Works Manila, P. I. ..... 1907

LYMAN, R. R., Professor of Civil Engineering, University of Utah, Vice Chairman, State Road Commission, and Civil and Consulting Engineer, Salt Lake City, Utah ..... 1908

MCALISTER, E. H., Dean of the College of Engineering, University of Oregon, Eugene, Oregon ..... 1911

McAllister, A. S., Associate Editor of Electrical World and Lecturer in Electrical Engineering, Pennsylvania State College, 239 West 39th St., New York, N. Y. ..... 1911

McCaffery, Richard S., Professor of Mining and Metallurgy, University of Idaho, Moscow, Idaho ..... 1911

McCaustland, E. J., Professor of Civil Engineering, University of Washington, Seattle, Wash. ..... 1902

McClintic, H. H., Vice-President and General Manager, McClintic-Marshall Construction Co., Pittsburgh, Pa..... 1910

McCoard, G. W., Professor of Mathematics, Ohio State University, Columbus, Ohio ..... 1911

McCormick, E. B., Professor of Experimental Engineering and Dean of Mechanic Arts, Kansas State Agricultural College, Manhattan, Kan. ..... 1908

McCrum, Ben, Draftsman with the McClintic-Marshall Construction Co., Pittsburgh, Pa. ..... 1911

McCullough, F. M., Assistant Professor of Materials, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1910

McDaniel, A. B., Professor of Civil Engineering, University of South Dakota, and Consulting Engineer, Vermillion, S. D. .... 1907

McGaw, Frederick M., Assistant Professor in Mathematics, Cornell College, Mt. Vernon, Iowa ..... 1911

McGonigle, Chas., Contracting Manager, Portland Office, Millikin Bros., Inc. (of New York, N. Y.), Chamber of Commerce Bldg., Portland, Ore. ..... 1910

McKibben, F. P., Professor of Civil Engineering, Lehigh University, South Bethlehem, Pa. ..... 1904

McMeen, Samuel G., Consulting Engineer, 1454 Monadnock Block, Chicago, Ill. ..... 1911

McMillin, Emerson, Chairman of Board of Directors of American Light and Traction Co. and President of many Companies, New York, N. Y. (Life Member) ..... 1911

McNair, F. W., President, Michigan College of Mines, Houghton, Mich. ..... 1897

McNaugher, D. W., Partner, Robert W. Hunt & Co., Engineers, Pittsburgh, Pa. ..... 1910

McRae, A. L., Professor of Physics, School of Mines and Metallurgy, University of Missouri, Rolla, Mo. ..... 1907

Mack, J. G. D., Professor of Machine Design, College of Engineering, University of Wisconsin, Madison, Wis..... 1901

Maclaurin, R. C., President, Massachusetts Institute of Technology, Boston, Mass. ..... 1909

MacNaughton, Jas., General Manager, Calumet and Hecla Mines, and Member Board of Control, Michigan College of Mines, Calumet, Mich. ..... 1905

MacNutt, Barry, Associate Professor of Physics, Lehigh University, South Bethlehem, Pa. ..... 1910
Macomber, G. S., Assistant Professor of Electrical Engineering, Cornell University, Ithaca, N. Y. ..... 1904
Magnusson, C. E., Professor of Electrical Engineering, University of Washington, Seattle, Wash. ..... 1907
Magruder, Wm. T., Professor of Mechanical Engineering, Ohio State University, Columbus, O. ..... 1893
Main, C. T., Consulting and Constructing Engineer, 14 Herrick St., Winchester, Mass. ..... 1911
Malcolm, C. W., Assistant Professor of Structural Engineering, University of Illinois, Urbana, Ill. ..... 1907
Mann, F. M., Professor of Architecture and Head of the Architectural Department, University of Illinois, Urbana, Ill. ..... 1911
Marburg, Edgar, Professor of Civil Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1894
Mark, R. M., Rodman, New York State Barge Canal, Minetto, Oswego Co., N. Y. ..... 1909
Marks, L. S., Professor of Mechanical Engineering, Harvard University, Cambridge, Mass. ..... 1909
Marks, W. D., Consulting Engineer, Park Row Bldg., New York City ..... 1911
Marquis, F. W., Railway Engineering Dept., University of Illinois, Urbana, Ill. ..... 1910
Marr, Robt. A., Dean of the Engineering Department, Virginia Polytechnic Institute, Blacksburg, Va. ..... 1912
Marsh, H. E., Instructor in Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1910
Marston, Anson, Dean of the Division of Engineering and Professor of Civil Engineering, Iowa State College, Ames, Ia. ..... 1894
Martenis, J. Van S., Assistant Professor of Mechanical Engineering, University of Minnesota, Minneapolis, Minn. ..... 1908
Martin, L. A., Jr., Dean and Professor of Mechanics, Stevens Institute of Technology, Hoboken, N. J. ..... 1907
Martin, T. C., Secretary, The National Electric Light Association, 29 West 39th St., New York, N. Y. ..... 1909
Marvin, F. O., Dean of the School of Engineering and Professor of Civil Engineering, University of Kansas, Lawrence, Kan... 1893
Marx, C. D., Professor of Civil Engineering, Leland Stanford Junior University, Stanford University, Cal. ..... 1893
Mathews, H. B., Professor of Physics, South Dakota State College, Brookings, S. D. ..... 1896
Matthews, Robertson, Instructor in Power Engineering, Cornell University, Ithaca, N. Y. ..... 1910

MAURER, E. R., Professor of Mechanics, University of Wisconsin, Madison, Wis. ..... 1897

MAVER, WILLIAM, JR., Consulting Electrical Engineer and Author, 136 Liberty St., New York, N. Y. ..... 1911

MEAD, D. W., Professor of Hydraulic and Sanitary Engineering, University of Wisconsin, Madison, Wis. ..... 1908

MEASE, J. A., Assistant Professor in Machine Design, Pennsylvania State College, State College, Pa. ..... 1909

MEEKER, W. H., Professor of Mechanical Engineering, Iowa State College, Ames, Ia. ..... 1903

MEES, C. L., President, Rose Polytechnic Institute, Terre Haute, Ind. ..... 1894

MEHELY, KALMAN, General Secretary of the Society of Hungarian Ironworks and Machinery Factories, Budapest, Hungary..... 1909

MEHRTENS, A. C., Chief Engineer, 346 Halcomb Ave., Detroit, Mich. 1908

MEIKLEJOHN, ROBERT, Assistant Professor of Engineering Drawing, Ohio State University, Columbus, O..... 1909

MENDENHALL, T. C., 329 N. Chestnut St., Ravenna, O. (Honorary Member) ..... 1895

MERRILL, JOSEPH, F., Director of the Utah State School of Mines, Professor of Physics and Electrical Engineering, University of Utah, Salt Lake City, Utah..... 1907

MERRIMAN, MANSFIELD, 1071 Madison Ave., New York, N. Y..... 1893

METCALF, LEONARD, of Metcalf and Eddy, Consulting Civil Engineers, 14 Beacon St., Boston, Mass..... 1910

MIGGETT, W. L., Professor of Shop Practice and Superintendent of the Engineering Shops, University of Michigan, Ann Arbor, Mich. ..... 1902

MILLER, DAYTON C., Professor of Physics, Case School of Applied Science, Cleveland, O. ..... 1907

MILLER, HUGH, Professor of Civil Engineering, Clarkson School of Technology, Potsdam, N. Y. ..... 1909

MILLER, W. A., Assistant Professor of Railway Engineering, University of Missouri, Columbia, Mo. ..... 1908

MITCHAM, G. N., Professor of Civil Engineering, Alabama Polytechnic Institute, Auburn, Ala. ..... 1906

MITCHELL, BRAINERD, JR., Associate Professor of Mechanical Engineering, University of Arkansas, Fayetteville, Ark..... 1910

MITCHELL, H. C., with Penna. General Electric Co., Erie, Pa..... 1909

MODJESKI, RALPH, Consulting Engineer, 5326 East End Ave., Chicago, Ill. ..... 1908

MOLBY, F. A., Instructor in Physics, Cornell University, Ithaca, N. Y. ..... 1910

MOLITOR, D. A., Civil Engineer, 1012 Baltimore Ave., Kansas City, Mo. ..... 1907
MOLLESON, G. E., 50 Church St., New York City..... 1911
MONROE, W. K., Engineer in charge of Estimating, The Brown Hoisting Machinery Co., Cleveland, O..... 1911
MOOMAW, DALTON, Instructor in Mechanics and Hydraulics, Case School of Applied Science, Cleveland, O. ..... 1911
MOORE, H. F., Assistant Professor of Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill. ..... 1905
MOORE, L. E., Assistant Professor of Civil Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1907
MOORE, STANLEY H., Director, Mechanic Arts, McKinley High School, St. Louis, Mo..... 1902
MORE, C. C., Associate Professor of Civil Engineering, University of Washington, Seattle, Wash. ..... 1901
MORECROFT, J. H., Assistant Professor of Electrical Engineering, Columbia University, New York, N. Y..... 1908
MORLEY, FRED, Civil Engineer, Lapeer, Mich..... 1896
MORRIS, C. T., Professor of Structural Engineering, Ohio State University, Columbus, O. ..... 1907
MORRIS, RICHARD, Professor of Mathematics and Graphics, Rutgers College, New Brunswick, N. J. ..... 1910
MORSE, G. H., Professor of Electrical Engineering, University of Nebraska, Lincoln, Neb. ..... 1907
MORSE, J. L., Assistant Instructor in Machine Design, Michigan State Agricultural College, East Lansing, Mich. ..... 1910
MORSS, EVERETT, 115 Commonwealth Ave., Boston, Mass..... 1910
MOSELEY, A. W., Professor of Mechanics, Head of Department of Engineering, Lewis Institute, Chicago, Ill..... 1907
MOSS, S. A., Engineer, Turbine Research Dept., General Electric Co., Lynn, Mass. ..... 1911
MOTT, W. E., Professor of Civil Engineering, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1907
MOYER, J. A., Assistant Professor of Mechanical Engineering, in charge of Mechanical Laboratories, University of Michigan, Ann Arbor, Mich. ..... 1904
MUHLFELD, J. E., Vice-President and General Manager, Kansas City Southern Railway, Kansas City, Mo. ..... 1911
MUNROE, G. E., Construction Department, General Electric Co., Schenectady, N. Y. ..... 1907
MUNROE, H. S., Professor of Mining, School of Mines, Columbia University, New York, N. Y. ..... 1893
MURDOCK, H. E., Instructor in Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill..... 1910

MURPHY, F. H., Illuminating Engineer, Portland Railway Light & Power Co., Electric Bldg., Portland, Ore. ..... 1910

MURRAY, D. A., Professor of Applied Mathematics, McGill University, Montreal, Canada..... 1910

NAGLE, J. C., Professor of Civil Engineering, A. and M. College of Texas, College Station, Texas..... 1897

NEFF, FRANK HOWARD, Professor of Civil Engineering, Case School of Applied Science, Cleveland, O. ..... 1895

NELSON, A. H., Manager of the Chicago Office, The Macmillan Co., Chicago, Ill. ..... 1909

NELSON, J. H., Assistant Professor, Head of Department of Applied Mechanics, Case School of Applied Science, Cleveland, O. .... 1910

NESBIT, A. F., Professor of Physics, New Hampshire College of Agriculture and Mechanic Arts, Durham, N. H..... 1902

NEWKIRK, B. L., Assistant Professor of Mathematics and Mechanics, College of Engineering, University of Minnesota, Minneapolis, Minn. ..... 1908

NEWMAN, CHACE, Assistant Professor of Drawing, Michigan Agricultural College, East Lansing, Mich. ..... 1911

NEWTON, J. D., Dean of the College of Engineering, Loyola University, Chicago, Ill. ..... 1908

NICHOLS, C. W., Assistant Professor of Rhetoric, University of Minnesota, Minneapolis, Minn. ..... 1910

NICHOLS, GENERAL E. W., Superintendent, Virginia Military Institute, Lexington, Va. ..... 1908

NOBLE, H. P., Consulting Engineer, and Special Teacher, McKinley Technical High School, Washington, D. C..... 1908

NOERENBERG, C. E., Instructor in Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill..... 1910

NORRIS, E. B., Assistant Professor of Mechanical Engineering, University of Wisconsin, Madison, Wis..... 1907

NORRIS, H. H., Head Professor of Electrical Engineering, Cornell University, Ithaca, N. Y. ..... 1900

NORTH, H. B., Assistant Professor of Drawing and Descriptive Geometry, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1908

NORTON, A. E., Assistant Professor of Mechanical Drawing, Harvard University, Cambridge, Mass..... 1910

NORTON, C. L., Professor of Physics, Massachusetts Institute of Technology, Boston, Mass. ..... 1908

NORWOOD, C. J., Dean of the College of Mines and Metallurgy, State University of Kentucky, Lexington, Ky..... 1907

NOTTINGHAM, A. R., Engineer Physicist, Cornell University, Rockefeller Hall, Ithaca, N. Y. ..... 1910

NOYES, A. A., Professor of Theoretical Chemistry, Massachusetts Institute of Technology, Boston, Mass. ..... 1907

NOYES, R. E., Instructor in Applied Electricity, Pratt Institute, Brooklyn, N. Y. ..... 1909

NUNN, P. N., Chief Engineer, The Telluride Power Co., Provo, Utah, The Ontario Power Co., Niagara Falls, N. Y..... 1907

OCKERBLAD, A. M., Instructor in Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1911

OHLE, E. L., Professor of Mechanical Engineering, Washington University, St. Louis, Mo..... 1905

OLSEN, TINIUS, Mechanical Engineer, 500 N. 12th St., Philadelphia, Pa. ..... 1907

ORTH, H. D., Instructor in Mechanical Drawing, University of Wisconsin, Madison, Wis..... 1910

ORTON, EDW., JR., Professor of Ceramic Engineering and Dean of the College of Engineering, Ohio State University, Columbus, O. ..... 1900

OSBORN, F. A., Professor of Physics, University of Washington, Seattle, Wash. ..... 1907

OSBORNE, L. A., Vice-President, Westinghouse Electric & Mfg. Co., Pittsburgh, Pa. ..... 1911

OSSA, GASTON, Assistant in Physics, Universidad de Chile, Santiago, Chile, S. A. ..... 1911

OSTRANDER, J. E., Professor of Mathematics and Civil Engineering, Massachusetts Agricultural College, Amherst, Mass..... 1894

OSTRUP, JOHN C., Consulting Engineer, 17 Battery Place, New York, N. Y. ..... 1907

OWEN, R. S., Instructor in Civil Engineering, University of Wisconsin, Madison, Wis. ..... 1910

OWENS, R. B., Secretary of the Franklin Institute, Philadelphia, Pa. ..... 1894

PACK, F. J., Professor of Geology, University of Utah, Salt Lake City, Utah ..... 1911

PAINE, E. B., Assistant Professor of Electrical Engineering, University of Illinois, Urbana, Ill..... 1911

PARCEL, J. I., Instructor in Structural Engineering, University of Minnesota, Minneapolis, Minn. ..... 1910

PARK, C. F., Associate Professor of Mechanical Engineering, Director of Lowell Institute, School for Industrial Foremen, Massachusetts Institute of Technology, Boston, Mass. ..... 1903

PARKER, F. Y., U. S. Assistant Engineer, United States Engineer Office, Custom House, St. Louis, Mo. ..... 1910

PARKER, JOHN C., Mechanical and Electrical Engineer, Rochester Railway and Light Co., Rochester, N. Y. ..... 1910

PARKER, L. G., Structural Steel Designer with Marshall & Fox, Architects, 919 First National Bank Bldg., Chicago, Ill. ..... 1907
PARKS, C. W., Civil Engineer, United States Navy, Inspecting Engineer, General Electric Works, Schenectady, N. Y..... 1911
PARSHALL, R. L., Assistant Professor of Civil Engineering, Colorado Agricultural College, Ft. Collins, Colo..... 1910
PATTERSON, A. H., Professor of Physics, University of North Carolina, Chapel Hill, N. C. ..... 1907
PAUL, C. E., Associate Professor of Mechanics, Armour Institute of Technology, Chicago, Ill. ..... 1907
PAYNE, W. S., Instructor in Mechanical Engineering Department, University of Nebraska, Lincoln, Nebr..... 1910
PECK, M. H., Professor of Civil Engineering, Imperial Pei Yang University, Tientsin, North China..... 1909
PEGRAM, GEO. H., Chief Engineer, The Interborough Rapid Transit Co., 165 Broadway, New York, N. Y. ..... 1911
PENCE, W. D., Professor of Railway Engineering, University of Wisconsin; Engineer, Wisconsin Railroad and Tax Commissions, Madison, Wis. ..... 1895
PENDER, HAROLD, Professor of Theoretical and Applied Electricity, Massachusetts Institute of Technology, Boston, Mass..... 1909
PERRY, C. F., Supervisor of Manual and Industrial Training, Milwaukee Public Schools, Milwaukee, Wis..... 1907
PETTEE, C. H., Dean and Professor of Mathematics, New Hampshire College, Durham, N. H. ..... 1898
PHELON, J. O., Professor of Electrical Engineering, Worcester Polytechnic Institute, Worcester, Mass. ..... 1902
PHETTEPLACE, T. M., Assistant Professor of Mechanical Engineering, Brown University, Providence, R. I. ..... 1903
PHILLIPS, J. D., Assistant Dean, College of Engineering, and Professor of Drawing, University of Wisconsin, Madison, Wis.... 1899
PHILP, B. K., Civil Engineer Student, Office of Public Roads, U. S. Dept. of Agriculture, Washington, D. C. ..... 1911
PICKELS, G. W., Jr., Instructor in Civil Engineering, University of Illinois, Urbana, Ill..... 1910
PILKINGTON, THOS., Instructor in Machine Design, Carnegie Technical Schools, Pittsburgh, Pa..... 1910
POLSON, J. A., Assistant Professor in Mechanical Engineering, in Charge of Engineering Laboratory, Michigan Agricultural College, East Lansing, Mich. ..... 1907
POOLE, CECIL P., Editor, Power, South Orange, N. J. ..... 1907
POORE, O. B., Manual Training Director, Aurora, Minn. ..... 1911
POORMAN, A. P., Assistant Professor of Mechanics, Purdue University, Lafayette, Ind. ..... 1907

POPE, WILLARD, Vice-President and Engineer, The Canadian Bridge Co., Ltd., Walkerville, Ontario ..... 1911
PORTER, DWIGHT, Professor of Hydraulic Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1893
PORTER, J. B., Professor of Mining Engineering, McGill University, Montreal, Quebec, Canada..... 1904
PORTER, J. F., President of the Tri-City Railway and Light Co., Davenport, Iowa ..... 1912
PORTER, J. M., Professor of Civil Engineering, Lafayette College, Easton, Pa. ..... 1893
PORTER, R. A., Associate Professor of Physics, Syracuse University, Syracuse, N. Y. ..... 1908
POTTER, A. A., Professor of Steam and Gas Engineering, Kansas State Agricultural College, Manhattan, Kas..... 1908
POTTS, R. J., Associate Professor of Highway Engineering, A. and M. College of Texas, College Station, Texas..... 1910
POWERS, E. L., Editor GOOD ROADS, 150 Nassau St., New York City 1911
PRATT, C. M., President, Board of Trustees, Pratt Institute, Brooklyn, N. Y. ..... 1907
PRATT, F. B., Secretary, Pratt Institute, Brooklyn, N. Y.....1907
PRATT, G. D., Treasurer, Pratt Institute, Brooklyn, N. Y..... 1909
PRATT, J. A., Director, Williamson Free School of Mechanical Trades, Delaware Co., Pa..... 1908
PRAY, J. S., Professor and Chairman, Department of Landscape Architecture, Harvard University, Cambridge, Mass. ..... 1910
PRIESTER, G. C., Instructor in Engineering Mathematics, University of Minnesota, Minneapolis, Minn..... 1910
PRIME, ALFRED C., Assistant Supervisor, Penna. R. R., Jamesburg, N. J. (Life Member) ..... 1910
PRYOR, F. L., Professor of Experimental Engineering, Stevens Institute of Technology, Hoboken, N. J..... 1908
PULLEN, M. W., Graduate Student in Electrical Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1909
PUPIN, M. I., Professor of Electromechanics and Director of Research Laboratories in Physics, Columbia University, New York, N. Y. ..... 1895
PURYEAR, CHARLES, Dean and Professor of Mathematics, A. and M. College of Texas, College Station, Texas..... 1901
QUERBACH, EARL, Draftsman, American Bridge Co., Ambridge, Pa. 1909
RALSTON, J. C., Consulting Engineer, also Vice-President and Consulting Engineer, Pacific Coast Pipe Co. of Seattle, 2421 W. Mission Ave., Spokane, Wash. ..... 1910
RANDALL, J. A., Instructor in Mechanics and Heat, Pratt Institute, Brooklyn, N. Y..... 1911

RANDALL, O. E., Professor of Mechanics and Mechanical Drawing, Brown University, Providence, R. I. ..... 1903

RANDOLPH, L. S., Professor of Mechanical Engineering, Virginia Polytechnic Institute, Blacksburg, Va. ..... 1894

RASCHE, W. H., Professor of Graphics, Virginia Polytechnic Institute, Blacksburg, Va. ..... 1910

RASMUSEN, J. E., Assistant Professor of Applied Mechanics and Machine Design, University of Nebraska, Lincoln, Neb. ..... 1910

RAYMOND, ALFRED, General Manager, Drainage Department, Sewerage and Water Board of New Orleans, New Orleans, La. ..... 1911

RAYMOND, F. N., Assistant Professor of English, University of Kansas, Lawrence, Kan. ..... 1910

RAYMOND, H. M., Dean of Engineering Studies and Professor of Experimental Physics, Armour Institute of Technology, Chicago, Ill. ..... 1903

RAYMOND, W. G., Dean of the College of Applied Science and Professor of Civil Engineering, State University of Iowa, Iowa City, Ia. ..... 1893

RAYMOND, W. J., Associate Professor of Physics, University of California, Berkeley, Calif. ..... 1911

REBER, L. E., Dean of the University Extension Division, University of Wisconsin, Madison, Wis. ..... 1893

REES, H. P., Head Instructor of Applied Electricity, Escola de Engenharia, Porto Alegre, Brazil ..... 1910

REID, CLARENCE E., Professor of Electrical Engineering, Mississippi A. and M. College, Agricultural College, Miss. ..... 1907

RETTGER, E. W., Assistant Professor of Applied Mechanics, College of Civil Engineering, Cornell University, Ithaca, N. Y. ..... 1910

RICE, H. A., Associate Professor of Civil Engineering, University of Kansas, Lawrence, Kan. ..... 1907

RICHARDS, C. RUSS, Professor of Mechanical Engineering, in charge of the Department, University of Illinois, Urbana, Ill. ..... 1895

RICHARDS, CHAS. RUSSELL, Director, Cooper Union, New York, N. Y. ..... 1904

RICHARDS, ROBERT H., Professor of Mining Engineering and Metallurgy, Massachusetts Institute of Technology, Boston, Mass. .. 1895

RICHARDS, T. E., Instructor, Michigan College of Mines, Houghton, Mich. ..... 1910

RICHARDS, WM. H., Instructor of Wood-work, Manual Training and Pattern Making, Department of Mechanical Engineering, University of Minnesota, Minneapolis, Minn. ..... 1910

RICHARDSON, M. R., Graduate Student in Mathematics, University of Chicago, Chicago, Ill. ..... 1910

RICHEY, J. J., Instructor in Civil Engineering, University of Illinois, Urbana, Ill. ..... 1910

RICHTER, A. W., Professor of Engineering, in charge of the School of Engineering, University of Montana, Missoula, Mont..... 1894

RICHTMYER, F. K., Assistant Professor of Physics, Cornell University, Ithaca, N. Y. ..... 1910

RICKER, N. C., Professor of Architecture, University of Illinois; President, Illinois Board of Examiners of Architects, Urbana, Ill. ..... 1894

RIESENBERGER, ADAM, Registrar and Treasurer, Stevens Institute of Technology, Hoboken, N. J..... 1908

RIGGS, NORMAN C., Associate Professor of Applied Mechanics, Carnegie Technical Schools, Pittsburgh, Pa..... 1907

RIGGS, W. M., President and Consulting Professor of Engineering, Clemson A. and M. College of South Carolina, Clemson College, S. C. ..... 1897

RISLEY, W. J., Professor of Mathematics, James Millikin University, Decatur, Ill. ..... 1910

RITTENHOUSE, L. H., Associate Professor of Mechanical and Electrical Engineering, Haverford College, Haverford, Pa. ..... 1906

ROBBINS, A. G., Professor of Topographical Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1894

ROBERTS, MILNOR, Dean of the College of Mines, and Professor of Mining Engineering and Metallurgy, University of Washington, Seattle, Wash. ..... 1910

ROBERTS, W. J., State Highway Commissioner, Olympia, Wash. .... 1903

ROBINSON, A. A., 900 Tyler St., Topeka, Kan. ..... 1910

ROBINSON, EDW., Professor of Mechanical Engineering, University of Vermont, Burlington, Vt. ..... 1899

ROBINSON, F. H., Professor of Civil Engineering, Delaware College, Newark, Del. ..... 1894

ROCKWELL, E. H., Professor of Structural Engineering, Tufts College, Tufts College, Mass. ..... 1907

RODHOUSE, T. J., Assistant Professor of Hydraulic Engineering, University of Missouri, Columbia, Mo. ..... 1904

ROE, J. W., Assistant Professor of Mechanical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn.... 1908

ROEBER, E. F., Editor, Metallurgical and Chemical Engineering, 239 W. 39th St., New York, N. Y. ..... 1909

ROGERS, RALPH, Tidioute, Pa. ..... 1908

ROHRER, A. L., Electrical Superintendent, Schenectady Works, General Electric Co., Schenectady, N. Y. ..... 1911

RONDINELLA, L. F., Head of Department of Drawing and Design, Central Manual Training High School, Philadelphia, Pa. ..... 1903

ROOT, J. E., Instructor in Civil Engineering, University of Cincinnati, Cincinnati, O. ..... 1910

RORTY, M. C., Manager, Commercial Methods Office, American Telephone & Telegraph Co., New York, N. Y. ..... 1912
ROSEBRUGH, T. R., Professor of Electrical Engineering, University of Toronto, Toronto, Ontario, Canada..... 1896
ROSING, A. S., Assistant Professor of Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1911
ROWELL, L. D., Assistant Professor of Electrical Engineering, Purdue University, Lafayette, Ind. ..... 1910
ROWLAND, ARTHUR J., Director of the School of Engineering and Professor of Electrical Engineering, Drexel Institute, Philadelphia, Pa. ..... 1903
ROWLEY, F. B., Instructor of Drawing and Descriptive Geometry, University of Minnesota, Minneapolis, Minn..... 1910
RUGG, H. O., Instructor of General Engineering Drawing, University of Illinois, Urbana, Ill. ..... 1909
RUGGLES, S. L., Instructor in Civil Engineering, Thayer School of Civil Engineering, Dartmouth College, Hanover, N. H. ..... 1910
RUSSELL, L. K., Professor of Chemistry, Clarkson School of Technology, Potsdam, N. Y..... 1910
RUSSELL, W. B., Director, Franklin Union, Boston, Mass..... 1903
RYAN, H. J., Professor of Electrical Engineering, Leland Stanford Junior University, Stanford University, Cal. ..... 1901
RYAN, W. T., Assistant Professor of Electrical Engineering, University of Minnesota, Minneapolis, Minn. ..... 1911
SADLER, H. C., Professor of Naval Architecture and Marine Engineering, University of Michigan, Ann Arbor, Mich..... 1907
SAGE, A. B., Professor of Mechanical Engineering, New Mexico College of A. & M. Arts, Agricultural College, N. M. ..... 1911
SANBORN, F. E., Professor of Industrial Arts, Ohio State University, Columbus, O. ..... 1899
SANFORD, C. H., Instructor in Applied Mechanics and Electricity, Stuyvesant High School, New York, N. Y. ..... 1909
SATTERFIELD, H. E., Professor of Mechanical Engineering, North Carolina College of Agriculture and Mechanic Arts, West Raleigh, N. C. ..... 1909
SAWYER, A. R., Professor of Physics and Electrical Engineering, Michigan Agricultural College, East Lansing, Mich..... 1907
SAYRE, H. A., Professor of Mathematics, University of Alabama, University, Ala. ..... 1910
SCHAPHORST, W. F., Technical Writer, 703 Park Row Bldg., New York, N. Y. ..... 1908
SCHEALER, S. R., Instructor in Applied Electricity, Pratt Institute, Brooklyn, N. Y. ..... 1911

SCHILDHAUER, EDW., Electrical and Mechanical Engineer, Isthmian Canal Commission, Culebra, Canal Zone, Panama ..... 1912

SCHMIDT, E. C., Professor of Railway Engineering, University of Illinois, Urbana, Ill. ..... 1907

SCHNEIDER, HERMAN, Professor of Civil Engineering and Dean of the College of Engineering, University of Cincinnati, Cincinnati, O. ..... 1903

SCHUCHARDT, R. F., Electrical Engineer, Commonwealth Edison Co., Chicago, Ill. ..... 1912

SCHUERMAN, W. H., Dean of the Engineering Department and Professor of Civil Engineering, Vanderbilt University, Nashville, Tenn. ..... 1895

SCHUYLER, J. D., Consulting Hydraulic Engineer, 1118 Union Trust Bldg., Los Angeles, Calif. ..... 1910

SCIPIO, L. A., Assistant Professor of Mechanical Engineering, University of Nebraska, Lincoln, Nebr. ..... 1910

SCOTT, A. C., President of Scott Engineering Co., Consulting Engineers, 632 Wilson Bldg., Dallas, Texas ..... 1903

SCOTT, C. F., Professor of Electrical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1904

SEARS, T. B., Associate Professor of Railway Engineering, University of California, Berkeley, Calif. ..... 1906

SEAVER, H. L., Assistant Professor of English, Massachusetts Institute of Technology, Boston, Mass. ..... 1908

SEDGWICK, W. T., Professor of Biology and Public Health, Massachusetts Institute of Technology, Boston, Mass. ..... 1896

SEEBY, F. J., Assistant Professor of Civil Engineering, College of Civil Engineering, Cornell University, Ithaca, N. Y. ..... 1908

SELBY, L. B., Assistant Professor of Mechanical Engineering, New Mexico A. and M. College, Agricultural College, N. M. ..... 1911

SEVER, G. F., Consulting Electrical Engineer, 13 Park Row, New York, N. Y. ..... 1903

SEWARD, H. L., Instructor in Mechanical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1910

SEXTON, F. H., President of the Nova Scotia Technical College, and Director of Technical Education, Halifax, Nova Scotia ..... 1908

SEYFERT, S. S., Assistant Professor in Electrical Engineering, Lehigh University, South Bethlehem, Pa. ..... 1908

SHAAD, G. C., Professor of Electrical Engineering, University of Kansas, Lawrence, Kan. ..... 1907

SHANE, ADOLPH, Associate Professor of Electrical Engineering, Iowa State College, Ames, Ia. ..... 1907

SHANKLAND, E. C., Civil Engineer, Firm of E. C. and R. M. Shankland, 4808 Champlain Ave., Chicago, Ill. ..... 1910

SHARPE, F. R., Assistant Professor of Mathematics, Cornell University, Ithaca, N. Y. ..... 1910
SHATTUCK, H. B., Associate Professor of Railroad Engineering, Pennsylvania State College, State College, Pa. ..... 1906
SHAW, H. B., Dean of the School of Engineering and Director of the Engineering Experiment Station, University of Missouri, Columbia, Mo. ..... 1907
SHAW, J. B., Assistant Professor of Mathematics, University of Illinois, Urbana, Ill. ..... 1909
SHAW, J. E., Instructor in Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1911
SHELDON, SAMUEL, Professor of Physics and Electrical Engineering, Polytechnic Institute of Brooklyn, Brooklyn, N. Y..... 1903
SHENEHON, FRANCIS C., Dean of the College of Engineering, University of Minnesota, Minneapolis, Minn. ..... 1909
SHEPARD, G. H., Efficiency Engineer, The Emerson Co., 30 Church St., New York, N. Y. ..... 1910
SHEPARDSON, G. D., Professor of Electrical Engineering, University of Minnesota, Minneapolis, Minn. ..... 1895
SHERMAN, C. E., Professor of Civil Engineering, Ohio State University, Columbus, Ohio ..... 1907
SHIPLEY, S. C., Assistant Professor of Machine Construction, and Superintendent of Shops, University of Minnesota, Minneapolis, Minn. ..... 1908
SHOOP, C. F., Assistant Professor, Department of Experimental Engineering, University of Minnesota, Minneapolis, Minn. .... 1906
SHORT, R. L., Principal West, Technical High School, Cleveland, O. 1902
SHOUDY, W. A., Baltimore Copper Smelting and Rolling Co., Baltimore, Md. ..... 1907
SHUSTER, J. W., Assistant Professor of Electrical Engineering, University of Wisconsin, Madison, Wis..... 1907
SIBLEY, F. H., Professor of Mechanical Engineering, University of Alabama, Tuscaloosa, Ala. ..... 1910
SLAYMAKER, P. K., Associate Professor of Applied Mechanics and Machine Design, University of Nebraska, Lincoln, Nebr..... 1910
SLICHTER, C. S., Professor of Applied Mathematics, University of Wisconsin and Consulting Engineer, U. S. Reclamation Service, Madison, Wis. ..... 1906
SLICHTER, W. I., Professor of Electrical Engineering, Columbia University, New York City..... 1911
SLIPPY, RALPH B., Consulting Engineer, 401–402 Marsh Place Bldg., Waterloo, Iowa ..... 1907
SLOCUM, R. H., Professor of Civil Engineering, North Dakota Agricultural College, Agricultural College, N. D..... 1903

SMITH, ARTHUR BESSEY, Electrical Engineer, The Automatic Electric Co., Chicago, Ill. ..... 1911
SMITH, A. G., Head of Department of Mathematics, State University of Iowa, Iowa City, Ia. ..... 1909
SMITH, ALTON L., Professor of Drawing and Machine Design, Worcester Polytechnic Institute, Worcester, Mass..... 1902
SMITH, ANSON W., Instructor in Mechanical Drawing, Pratt Institute, Brooklyn, N. Y. ..... 1907
SMITH, E. B., Assistant Professor of Experimental Mechanical Engineering, Drexel Institute, Philadelphia, Pa..... 1906
SMITH, H. B., Professor of Electrical Engineering, Worcester Polytechnic Institute, Worcester, Mass. ..... 1898
SMITH, HARRY E., Professor of Mechanical Engineering, Texas A. and M. College, College Station, Texas..... 1895
SMITH, H. S. S., Professor of Civil Engineering, Princeton University, Princeton, N. J. ..... 1894
SMITH, H. W., Engineer with Westinghouse E. and M. Co., 401 Gray Bldg., Wilkinsburg, Pa..... 1910
SMITH, J. E., Associate in Civil Engineering, University of Illinois, Urbana, Ill. ..... 1910
SMITH, J. HAMMOND, Professor of Civil Engineering, University of Pittsburgh, North Pittsburgh, Pa..... 1910
SMITH, JESSE M., Mechanical and Electrical Consulting Engineer, 220 Broadway, New York, N. Y. ..... 1911
SMITH, L. B., Instructor in Geology, School of Applied Science, Carnegie Technical School, Pittsburgh, Pa..... 1909
SMITH, L. S., Associate Professor of Topographic and Road Engineering, University of Wisconsin, Madison, Wis..... 1903
SMITH, P. F., Professor of Mathematics, Sheffield Scientific School, Yale University, New Haven, Conn..... 1908
SMITH, T. GUILFORD, 203 Elliott Square, Buffalo, N. Y..... 1911
SMULL, T. J., JR., Dean of the College of Engineering and Professor of Civil Engineering, Ohio Northern University, Ada, O. 1907
SMYTH, H. L., Professor of Mining and Metallurgy, Harvard University, Cambridge, Mass. ..... 1907
SNOW, C. H., Dean of School of Applied Science, and Professor of Civil Engineering, New York University, New York, N. Y.. 1895
SNOW, O. L., Instructor in Physics and Electrical Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1911
SNOW, WALTER B., Publicity Engineer, 170 Summer St., Boston, Mass. ..... 1899
SOLBERG, H. C., Professor of Mechanical Engineering, South Dakota State College of Agriculture and Mechanic Arts, Brookings, S. D. ..... 1894

SPALDING, F. P., Professor of Civil Engineering, University of Missouri, Columbia, Mo. ..... 1893

SPANGLER, H. W., Professor of Mechanical Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1893

SPARKS, EDWIN ERLE, President, The Pennsylvania State College, State College, Pa. ..... 1908

SPERR, F. W., Professor of Civil and Mining Engineering, Michigan College of Mines, Houghton, Mich. ..... 1896

SPINNEY, L. B., Professor of Physics and Illuminating Engineering, Iowa State College, Ames, Ia. ..... 1899

SPOFFORD, C. M., Hayward Professor of Civil Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1904

SPRAGUE, FRANK J., Consulting Engineer, 116 Riverside Drive, New York, N. Y. ..... 1911

SPRINGER, F. W., Professor of Electrical Engineering, University of Minnesota, Minneapolis, Minn. ..... 1896

STANFORD, J. V., Professor of Mechanical Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1907

STEARNS, W. D., Instructor in Experimental Electrical Engineering, Worcester Polytechnic Institute, Worcester, Mass. ..... 1910

STEEL, A. A., Professor of Mining, University of Arkansas, Fayetteville, Ark. ..... 1905

STEINMAN, D. B., Assistant Professor in Civil Engineering, University of Idaho, Moscow, Idaho ..... 1910

STEINMETZ, C. P., Chief Consulting Engineer, General Electric Co., and Professor of Electrical Engineering at Union University, Schenectady, N. Y. ..... 1910

STEPHENSON, S. A., JR., Instructor in Mathematics and Graphics, Rutgers College, New Brunswick, N. J. ..... 1910

STEVENS, E. F., Librarian, Pratt Institute Free Library, and Director, School of Library Sciences, Brooklyn, N. Y. ..... 1908

STEVENS, J. F., c/o Waldorf Astoria Hotel, New York City ..... 1910

STEWARD, R. K., Instructor in General Engineering Drawing, University of Illinois, Urbana, Ill. ..... 1910

STEWART, C. E., Assistant Professor Mechanic Arts, Tufts College, Tufts College, Mass. ..... 1908

STEWART, G. W., Professor of Physics, State University of Iowa, Iowa City, Ia. ..... 1910

STEWART, JOHN L., Professor of Economics and History, Lehigh University, South Bethlehem, Pa. ..... 1908

STEWART, L. B., Professor of Surveying and Geodesy, Faculty of Applied Science and Engineering, Toronto University, Toronto, Ontario, Canada ..... 1897

STEWART, O. M., Professor of Physics, University of Missouri, Columbia, Mo. ..... 1909
STILLMAN, F. H., President, The Watson-Stillman Co., 50 Church St., New York City ..... 1911
STOEK, H. H., Professor of Mining Engineering, University of Illinois, Urbana, Ill. ..... 1907
STONE, C. A., Member of the Firm of Stone and Webster, Consulting Engineers, Boston, Mass. ..... 1907
STONE, CHAS. W., Consulting Engineer, General Electric Co., Schenectady, N. Y. ..... 1911
STONE, E. A., Consulting Engineer, 609 Dominion Trust Bldg., Vancouver, B. C. ..... 1907
STORM, E. R., Architect, 160 Fifth Ave., New York, N. Y..... 1908
STOTT, H. G., Superintendent of Motive Power, Interborough Rapid Transit Co., New York, N. Y. ..... 1911
STOUT, O. V. P., Head Professor of Civil Engineering, University of Nebraska, Lincoln, Neb. ..... 1894
STROBEL, C. L., Consulting Engineer and President of the Strobel Steel Construction Co., 1744 Monadnock Block, Chicago, Ill.... 1909
STUBBS, J. E., President, University of Nevada, Reno, Nev. ..... 1897
STURGES, T. L., JR., Professor of Electrical Engineering, Delaware College, Newark, Del. ..... 1910
SVENSEN, C. L., Instructor in Mechanical Engineering, Tufts College, Tufts College, Mass. ..... 1909
SWAIN, G. F., Professor of Civil Engineering, Graduate School of Applied Science, Harvard University, Cambridge, Mass..... 1893
SWARTZEL, K. D., Professor of Mathematics, Ohio State University, Columbus, O. ..... 1910
SWEETSER, E. O., Assistant Professor of Civil Engineering, Washington University, St. Louis, Mo. ..... 1910
SWEETSER, W. J., Assistant Professor of Machine Design, Case School of Applied Science, Cleveland, O. ..... 1910
SWETT, G. W., Instructor in Mechanical Engineering, Massachusetts Institute of Technology, Boston, Mass..... 1907
SWIFT, WALTER, Secretary, Department of Applied Science, University of Sheffield, Sheffield, England..... 1902
SWINNEY, J. B., Educational Dept., Longmans, Green and Co., New York City ..... 1911
TALBOT, A. N., Professor of Municipal and Sanitary Engineering, and in charge of Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill. ..... 1893
TALBOT, H. P., Professor of Inorganic and Analytical Chemistry, Massachusetts Institute of Technology, Boston, Mass. ..... 1902

TANNER, J. H., Professor of Mathematics, Cornell University, Ithaca, N. Y. ..... 1910
TAYLOR, S. N., Professor of Physics, Goucher College, Baltimore, Md. ..... 1908
TAYLOR, T. U., Professor of Civil Engineering and Dean of Engineering Department, University of Texas, Austin, Texas..... 1902
TELLEEN, J. M., Assistant Professor of English, Case School of Applied Science, Cleveland, O. ..... 1908
THACH, C. C., President, Alabama Polytechnic Institute, Auburn, Ala. ..... 1905
THALER, J. A., Professor of Electrical Engineering, Montana College of Agriculture and Mechanic Arts, Bozeman, Mont..... 1901
THAYER, H. R., Assistant Professor in Structural Design, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1911
THOMAS, A. L., Instructor in Mechanical Drawing and Physics, Alabama Polytechnic Institute, Auburn, Ala. ..... 1907
THOMAS, C. C., Professor of Steam and Gas Engineering, University of Wisconsin, Madison, Wis. ..... 1908
THOMAS, C. F., Instructor in Mathematics, Case School of Applied Science, Cleveland, O. ..... 1909
THOMAS, EVAN, Assistant Professor of Mathematics, Engineering Department, University of Vermont, Burlington, Vt..... 1908
THOMAS, G. B., Professor of Electrical Engineering, Colorado College, Colorado Springs, Colo. ..... 1911
THOMAS, R. G., Professor of Mathematics and Engineering, The Citadel, The Military College of S. C., Charleston, S. C..... 1894
THOMPSON, FRANK F., Professor of Electrical Engineering, Rutgers College, New Brunswick, N. J. ..... 1909
THOMPSON, G. S., Assistant in Department of Mechanics, Rensselaer Polytechnic Institute, Troy, N. Y..... 1907
THOMPSON, JAS., with McGraw-Hill Book Co., 239 W. 39th St., New York, N. Y. ..... 1911
THOMSON, R. D., Instructor of Electrical Engineering, University of Vermont, Burlington, Vt. ..... 1912
THORKELSON, H. J., Associate Professor of Steam Engineering, College of Engineering, University of Wisconsin, Madison, Wis.. 1909
THORNBURG, C. L., Professor of Mathematics and Astronomy, Lehigh University, South Bethlehem, Pa..... 1894
TIBBETTS, FRED H., Civil and Consulting Engineer, Alaska Commercial Bldg., San Francisco, Calif. ..... 1908
TIMBIE, W. H., Head of Applied Science Dept., Wentworth Institute, Boston, Mass. ..... 1908
TITSWORTH, A. A., Professor of Civil Engineering, Rutgers College, New Brunswick, N. J. ..... 1903

TOPPING, A. N., Associate Professor of Electrical Engineering, Purdue University, Lafayette, Ind. ..... 1910

TOUCEDA, E. A., Professor of Metallurgy, Rensselaer Polytechnic Institute, Troy, N. Y. ..... 1907

TOWER, C. H., Instructor in Electrical Engineering, Cornell University, Ithaca, N. Y. ..... 1911

TOWLE, W. M., Professor of Industrial Engineering, Clarkson School of Technology, Potsdam, N. Y. ..... 1895

TOWNE, LOCKWOOD J., Instructor in Civil Engineering, University of Illinois, Urbana, Ill. ..... 1911

TRACY, J. C., Assistant Professor of Structural Engineering, Sheffield Scientific School, Yale University, New Haven, Conn.... 1907

TRASK, B. E., Civil Engineer with James Stewart & Co., Hibernia Bank Bldg., New Orleans, La..... 1907

TURLEY, O. J., Civil and Irrigation Engineer, Turley Ditch Co., Inc., Turley, San Juan Co., New Mexico..... 1912

TURNEAURE, F. E., Dean of the College of Engineering, University of Wisconsin, Madison, Wis..... 1894

TURNER, D. L., General Inspector of Stations, Public Service Commission for the First District, 220 W. 107th St., New York, N. Y. ..... 1898

TURNER, W. P., Professor of Practical Mechanics, Purdue University, Lafayette, Ind. ..... 1900

TURNER, WM. S., Consulting Engineer, 1008 Spalding Bldg., Portland, Ore. ..... 1911

TYLER, H. W., Professor of Mathematics, Massachusetts Institute of Technology, Boston, Mass. ..... 1894

ULBRICHT, T. C., Instructor, Department of Power Engineering, Cornell University, Ithaca, N. Y..... 1909

UPSON, W. L., Professor of Electrical Engineering, University of Vermont, Burlington, Vt. ..... 1910

UX, RUSSELL R., Designer of Model Steam Engines and Locomotives, 740 Hellertown Ave., Allentown, Pa. ..... 1911

VALENTINE, F. P., General Superintendent of Traffic, New England Telephone Co., 50 Oliver St., Boston, Mass. ..... 1911

VAN ALSTYNE, DAVID, Vice-President in Engineering and Manufacturing, Allis-Chalmers Co., Milwaukee, Wis. ..... 1911

VAN BUSKIRK, H. C., Associate Professor of Mathematics, Throop Polytechnic Institute, Pasadena, Calif..... 1911

VAN NESS, L. G., Secretary, Merchants' Power Co., Memphis, Tenn. 1907

VAN ORNUM, J. L., Professor of Civil Engineering, Washington University, St. Louis, Mo. ..... 1895

VAN ZANDT, J. G., Associate Professor of Civil Engineering, University of Southern California, Los Angeles, Calif..... 1909

VEAL, C. B., Professor of Machine Design, Purdue University, Lafayette, Ind. ..... 1910

VEDDER, H. K., Professor of Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1894

VEDDER, J. N., Special Investigator in the Engineering Experiment Station, University of Illinois, Urbana, Ill. ..... 1910

VON ENDE, C. L., Professor of Chemistry, University of Idaho, Moscow, Idaho ..... 1911

VOSE, F. H., Assistant Professor of Mechanical Engineering, Case School of Applied Science, Cleveland, O. ..... 1907

VOSSKUEHLER, J. HENRY, Assistant Professor of Machine Design, University of Wisconsin, Madison, Wis. ..... 1902

VOTEY, J. W., Professor of Civil Engineering and Dean of the College of Engineering, University of Vermont, Burlington, Vt. ..... 1902

WADDELL, J. A. L., Consulting Bridge Engineer, Waddell and Harrington, Kansas City, Mo. ..... 1893

WADSWORTH, F. L. O., Consulting and Advisory Engineer, Oliver Bldg., Pittsburgh, Pa. ..... 1911

WADSWORTH, J. E., Resident Engineer, American Bridge Co., Yonkers, N. Y. ..... 1895

WADSWORTH, M. E., Dean of the School of Mines and Professor of Mining Geology, University of Pittsburgh, Pittsburgh, Pa. ..... 1895

WAGGONER, C. W., Professor of Physics, West Virginia University, Morgantown, W. Va. ..... 1910

WAGNER, F. C., Professor of Mechanical and Electrical Engineering, Rose Polytechnic Institute, Terre Haute, Ind. ..... 1911

WAGNER, S. T., Assistant Engineer, The Philadelphia and Reading Railway Co., Philadelphia, Pa. ..... 1911

WAIT, J. C., Attorney-at-Law, 38 Park Row, New York, N. Y. ..... 1907

WALDO, C. A., Thayer Professor of Mathematics and Applied Mechanics, Washington University, St. Louis, Mo. ..... 1897

WALDO, E. H., Assistant Professor of Electrical Engineering, University of Illinois, Urbana, Ill. ..... 1911

WALKER, B. M., Director of the Engineering School, and Professor of Mathematics, Mississippi A. and M. College, Agricultural College, Miss. ..... 1911

WALKER, CHAS. L., Assistant Professor of Applied Mechanics, College of Civil Engineering, Cornell University, Ithaca, N. Y. ..... 1910

WALKER, E. D., Professor of Hydraulic and Sanitary Engineering, Pennsylvania State College, State College, Pa. ..... 1895

WALKER, E. S., Assistant Professor of Civil Engineering, University of Florida, Gainesville, Fla. ..... 1910

WALKER, P. F., Professor of Mechanical Engineering and Director of Fowler Shops, University of Kansas, Lawrence, Kan. ..... 1907

WALLER, O. L., Vice-President and Professor of Mathematics and Civil Engineering, State College of Washington, Pullman, Wash. 1911

WALLIS, R. S., Instructor in Civil Engineering, Iowa State College, Ames, Ia. ..... 1911

WARD, K. B., Instructor in Civil Engineering, Ohio State University, Columbus, O. ..... 1907

WATERMAN, E. L., Assistant Professor of Civil Engineering, Pennsylvania State College, State College, Pa. ..... 1907

WATSON, J. W., Assistant Professor of Electrical Engineering, University of Wisconsin, Madison, Wis. ..... 1910

WATT, H. A., Instructor in English, University of Wisconsin, Madison, Wis. ..... 1911

WATTS, C. W., Professor of Mathematics, The Virginia Military Institute, Lexington, Va. ..... 1911

WEAVER, W. D., Editor, Electrical World, 239 W. 39th St., New York, N. Y. ..... 1909

WEBB, J. B., Consulting Engineer in Mathematics, Mechanics and Physics, Hoboken, N. J. ..... 1906

WEBBER, R. I., Associate Professor of Structural Engineering, Pennsylvania State College State College, Pa. ..... 1907

WEBSTER, E. S., Member of the Firm of Stone and Webster, 147 Milk St., Boston, Mass. ..... 1907

WEED, J. MURRAY, Chairman of Student and Apprentice Committee, General Electric Co., Pittsfield, Mass. ..... 1911

WENDELL, G. V., Professor of Physics, Columbia University, New York, N. Y. ..... 1900

WENDT, W. B., Assistant Professor of Civil Engineering, Michigan Agricultural College, East Lansing, Mich. ..... 1908

WESTCOTT, A. L., Assistant Professor of Mechanical Engineering, University of Missouri, Columbia, Mo. ..... 1908

WESTON, EDW., President, The Weston Electrical Instrument Co., Waverly Park, Newark, N. J. ..... 1911

WHEELER, EARL, General Manager, Electric Speedometer Company, Evans Bldg., Washington, D. C. ..... 1907

WHEELER, L. P., Assistant Professor of Physics, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1908

WHIPPLE, GEORGE C., Professor of Sanitary Engineering, Harvard University, Cambridge, Mass., and Consulting Engineer, Firm of Hazen and Whipple, 103 Park Ave., New York, N. Y. ..... 1896

WHITE, A. E., Instructor in Mathematics, Kansas State Agricultural College, Manhattan, Kan. ..... 1910

WHITE, JAS. G., President, J. G. White & Co., Inc., New York, Chairman, J. G. White & Co., Ltd., London, England ..... 1911

WHITE, J. M., Professor of Architectural Engineering and Supervising Architect, University of Illinois, Urbana, Ill. ..... 1900

WHITMORE, J. B., Associate Professor of Drawing and Descriptive Geometry in charge of Department of Engineering Drawing and Architectural Engineering, Pennsylvania State College, State College, Pa. ..... 1910

WHITTEMORE, H. L., Engineer of Tests, Watertown Arsenal, Watertown, Mass. ..... 1909

WILEY, W. O., Publisher of Scientific Books, Secretary, John Wiley & Sons, New York City ..... 1904

WILLETT, A. H., Professor of Economics and Commerce, Head of Department of Commercial Engineering, Carnegie Technical Schools, School of Applied Science, Pittsburgh, Pa ..... 1910

WILLIAMS, C. C., Assistant Professor of Civil Engineering, University of Colorado, Boulder, Colo ..... 1909

WILLIAMS, F. B., Professor of Mathematics, Clark College, Worcester, Mass. ..... 1901

WILLIAMS, GARDNER S., Consulting Engineer, Ann Arbor, Mich. ... 1907

WILLIAMS, J. P. J., Assistant Professor of Civil Engineering, Columbia University, New York, N. Y. ..... 1911

WILLIAMS, O. E., Instructor in Engineering Drawing, Ohio State University, Columbus, Ohio ..... 1910

WILLIAMS, S. N., Professor of Civil Engineering, Cornell College, Mt. Vernon, Iowa ..... 1893

WILLIS, PAUL, President, Kenwood Bridge Co., 4857 Madison Ave., Chicago, Ill. ..... 1910

WILLISTON, ARTHUR L., Principal, Wentworth Institute, 27 Kilsyth Road, Brookline, Mass. ..... 1897

WILMORE, J. J., Dean, School of Engineering, and Professor of Mechanical Engineering, Alabama Polytechnic Institute, Auburn, Ala. ..... 1894

WILSON, A. M., Professor of Electrical Engineering, University of Cincinnati, Cincinnati, O. ..... 1907

WILSON, B. N., Professor of Mechanical Engineering, and Superintendent of Mechanic Arts, University of Arkansas, Fayetteville, Ark. ..... 1907

WILSON, D. T., Associate Professor of Mathematics and Astronomy, Case School of Applied Science, Cleveland, O ..... 1907

WILSON, V. T., Professor of Drawing and Design, Michigan Agricultural College, East Lansing, Mich ..... 1906

WILSON, W. L., Professor of Railroad Engineering, Lehigh University, South Bethlehem, Pa. ..... 1909

WITHEY, M. O., Assistant Professor of Mechanics, University of Wisconsin, Madison, Wis. ..... 1910

WITHROW, JAMES R., Associate Professor of Chemistry, Ohio State University, Columbus, O. ..... 1907

WITTIG, GUSTAV, Professor of Electrical Engineering and Physics, University of Alabama, Tuscaloosa, Ala. ..... 1910

WOLFEL, P. L., Chief Engineer, McClintic-Marshall Construction Co., Pittsburgh, Pa. ..... 1910

WOOD, A. J., Associate Professor of Railway Mechanical Engineering, Pennsylvania State College, State College, Pa. ..... 1898

WOOD, E. H., Professor of Mechanics of Engineering, Sibley College, Cornell University, Ithaca, N. Y. ..... 1910

WOODS, H. C., Instructor in General Engineering Drawing, University of Colorado, Boulder, Colo. ..... 1910

WOODWARD, CALVIN M., Professor Emeritus of Mathematics and Applied Mechanics, Washington University, St. Louis, Mo. ..... 1894

WOODWARD, R. S., President, Carnegie Institution of Washington, Washington, D. C. ..... 1893

WOODWARD, S. M., Professor of Mechanics, State University of Iowa, Iowa City, Ia. ..... 1910

WOOSTER, L. F., Instructor in Electrical Engineering, Oregon Agricultural College, Corvallis, Ore. ..... 1912

WRAY, J. G., Chief Engineer, Central Group of Bell Telephone Companies, 230 W. Washington St., Chicago, Ill. ..... 1911

WRIGHT, A. S., Professor of Modern Languages, Case School of Applied Science, Cleveland, O. ..... 1907

WURTS, A. J., Professor and Head of Electrical Department, Carnegie Technical Schools, Pittsburgh, Pa. ..... 1910

YERZLEY, W. A., Superintendent Engineer, Globe Cutlery Works, Newark, N. J. ..... 1907

YOUNG, C. M., Associate Professor of Mining Engineering, University of Kansas, Lawrence, Kan. ..... 1907

YOUNG, G. A., Acting Professor of Mechanical Engineering, Purdue University, Lafayette, Ind. ..... 1907

YOUNG, L. E., Director of the School of Mines, University of Missouri, Rolla, Mo. ..... 1903

ZELENY, ANTHONY, Professor of Physics, University of Minnesota, Minneapolis, Minn. ..... 1907

ZELLER, J. W., Instructor in Mechanical Engineering, University of Florida, Gainesville, Fla. ..... 1912

ZELNER, O. S., Assistant Professor of Surveying, University of Minnesota, Minneapolis, Minn. ..... 1910

ZIMMERMAN, O. B., Mechanical Engineer with International Harvester Co., Tractor Works, Chicago, Ill. ..... 1902

ZIWET, ALEXANDER, Professor of Mathematics, University of Michigan, Ann Arbor, Mich. ..... 1897

ZOWSKI-ZWIERZCHOWSKI, S. J., Junior Professor of Mechanical Engineering, University of Michigan, Ann Arbor, Mich. ..... 1910

## NEW MEMBERS.

(Paste on p. 327 in year book, February BULLETIN.)

ADAMS, CONRAD A., Instructor in Mechanic Arts, Tufts College, Tufts College, Mass. ..... 1912

ADAMS, F. J., Instructor in Electrical Engineering, Worcester Polytechnic Institute, Worcester, Mass. ..... 1912

ADAMSON, K. F., Instructor in Mechanical Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1912

ANDREWS, W. H., Assistant Professor of Mathematics, Kansas State Agricultural College, Manhattan, Kans. ..... 1912

AUSTIN, F. E., Professor of Electrical Engineering, Dartmouth College, Hanover, N. H. ..... 1912

BABBITT, A. B., Head of Department of Drawing and Design, Wentworth Institute, Boston, Mass. ..... 1912

BAHNEY, L. W., Assistant Professor of Metallurgy, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1912

BARK, ELMER, Instructor in Mechanical Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1912

BATES, J. T., Assistant Professor of Mechanical Engineering, Iowa State College, Ames, Ia. ..... 1912

BENEDICT, B. W., Director of Shop Laboratories, Mechanical Engineering Dept., University of Illinois, Urbana, Ill. ..... 1912

BERARD, S. J., Instructor in Machine Design, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1912

BISHOP, C. T., Assistant Professor of Civil Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1912

BLACK, R. M., Instructor in Civil Engineering and Mechanics, State University of Iowa, Iowa City, Ia. ..... 1912

BLACKBURN, H. W., Instructor in Mechanical Engineering, University of Vermont, Burlington, Vt. ..... 1912

BOOMSLITER, G. P., Instructor in Theoretical and Applied Mechanics, University of Illinois, Urbana, Ill. ..... 1912

BOYER, E. E., Electrical Superintendent, General Electric Co., Lynn, Mass. ..... 1912

BOYER, F. Q., Instructor in Mechanical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1912

BOZELL, H. V., Professor of Electrical Engineering and Director of the School of Electrical Engineering, University of Oklahoma, Norman, Okla. ..... 1912

BROWN, B. H., Professor of Physics, Whitman College, Walla Walla, Wash. ..... 1912

BROWN, CHAS. B., Professor of Railroad Engineering, University of Maine, Orono, Me. ..... 1912

BROWN, F. D., Consulting Engineer, City Hall, Shawnee, Okla. ... 1912
BRYDEN, CHAS. L., Principal of School of Metal Mining and Metallurgy, International Correspondence Schools, Scranton, Pa. .. 1912
BUYERS, A. S., Instructor in Mechanical Engineering, University of Illinois, Urbana, Ill. ..... 1912
CHASE, C. F., Assistant in Farm Mechanics, Kansas State Agricultural College, Manhattan, Kans. ..... 1912
CHILDS, A. T., Assistant Professor of Electrical Engineering, University of Maine, Orono, Me. ..... 1912
CLARK, J. C., 1312 Center St., Wilkinsburg, Pa. ..... 1912
COGHILL, WM. H., Instructor in Mining and Metallurgy, Northwestern University, Evanston, Ill. ..... 1912
COLEMAN, J. F., Consulting Engineer, 920 Hibernia Bldg., New Orleans, La. ..... 1912
CONKLING, L. D., Associate Professor of Civil Engineering, Lehigh University, South Bethlehem, Pa. ..... 1912
CONNER, S. L., Instructor in Railroad Engineering, Tufts College, Tufts College, Mass. ..... 1912
COOPER, F. L., Instructor in Physics, Yale University, New Haven, Conn. ..... 1912
CORBETT, L. J., Associate Professor of Electrical Engineering, University of Idaho, Moscow, Ida. ..... 1912
CRAWFORD, WM. C., Master, Boston Industrial School for Boys, Boston, Mass. ..... 1912
CROCKETT, CHAS. W., Professor of Mathematics and Astronomy Rensselaer Polytechnic Institute, Troy, N. Y. ..... 1912
CRUM, R. W., Assistant Professor of Civil Engineering, Iowa State College, Ames, Ia. ..... 1912
DARGAN, F. T., Acting Professor of Electrical Engineering, Clemson A. & M. College, Clemson College, S. C. ..... 1912
DAVIS, R. P., Associate Professor of Structural and Hydraulic Engineering, West Virginia University, Morgantown, W. Va. . 1912
DENNISON, B. C., Assistant Professor of Electrical Engineering, Carnegie Institute of Technology, Pittsburgh, Pa. ..... 1912
DESCHWEINITZ, P. B., Professor of Machine Design, Lehigh University, South Bethlehem, Pa. ..... 1912
DILLINGHAM, ALEXANDER, Instructor of Mathematics, Tufts College, Tufts College, Mass. ..... 1912
DOBBS, F. E., Instructor in Estimating and Practical Mathematics, Wentworth Institute, Boston, Mass. ..... 1912
DUFF, C. M., Instructor in Engineering Mathematics, University of Colorado, Boulder, Colo. ..... 1912
DWIGHT, H. B., Professor of Mechanical Engineering, University of Oklahoma, Norman, Okla. ..... 1912
EARLE, S. B., Director of the Engineering Department, and Professor of Mechanical Engineering, Clemson Agricultural College, Clemson College, S. C. ..... 1912

EHLERS, H. E., Professor of Experimental Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1912

EINSWILER, J. E., Assistant Professor of Mechanical Engineering, University of Michigan, Ann Arbor, Mich. ..... 1912

ELLIS, FREDERICK, Instructor in Wood Working, University of Illinois, Urbana, Ill. ..... 1912

FESSENDEN, E. A., Assistant Professor of Mechanical Engineering, University of Missouri, Columbia, Mo. ..... 1912

FISH, E. H., Director, Worcester Trade School, Worcester, Mass. . 1912

FITTERER, J. C., Professor of Civil and Irrigation Engineering, University of Wyoming, Laramie, Wyo. ..... 1912

FRAZIER, F. F., Assistant in Civil Engineering, Kansas State Agricultural College, Manhattan, Kans. ..... 1912

FULTON, C. H., Professor of Metallurgy and Head of Mining Dept., Case School of Applied Science, Cleveland, O. ..... 1912

FULTON, WM. L., Assistant Professor of Mathematics and Civil Engineering, University of Vermont, Burlington, Vt. ..... 1912

GILMORE, L. H., Professor of Physics, Throop Polytechnic Institute, Pasadena, Calif. ..... 1912

GODDARD, A. L., Supt. of Shops and Assistant Professor of Mechanical Practice, College of Engineering, University of Wisconsin, Madison, Wis. ..... 1912

GREEN, CHAS. W., Instructor in Electrical Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1912

GREVE, F. W., JR., Instructor in Hydraulic Engineering, Purdue University, Lafayette, Ind. ..... 1912

GRUMBEIN, J. B., Assistant Professor of Mechanical Engineering, West Virginia University, Morgantown, W. Va. ..... 1912

GUSTAFSON, LEWIS, Superintendent, The David Ranken, Jr. School of Mechanical Trades, St. Louis, Mo. ..... 1912

HAIGLER, CHAS. E., Professor of Mathematics, Wentworth Institute, Boston, Mass. ..... 1912

HAMILTON, J. McC., President, Montana State College of A. & M. Arts, Bozeman, Mont. ..... 1912

HAMLIN, H. L., Director of Printing, Boston Industrial School for Boys, Boston, Mass. ..... 1912

HANDFORTH, C. H., Instructor of Mechanical Drawing, Wentworth Institute, Boston, Mass. ..... 1912

HERTY, C. H., Professor of Chemistry, University of North Carolina, Chapel Hill, N. C. ..... 1912

HEUTER, R. R., Instructor in Mechanical Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1912

HIGGINS, CHAS. H., Consulting Engineer, Princeton University, Princeton, N. J. ..... 1912

HILL, WM. W., Professor of Electrical Engineering, Alabama Polytechnic Institute, Auburn, Ala. ..... 1912

HOERNING, CARLOS, Professor of Mechanical Engineering, Universidad de Chile, Santiago, Chile. ..... 1912
HOLBROOK, E. A., Assistant Professor in Mining Engineering and Metallurgy, Nova Scotia Technical College, Halifax, N. S. ... 1912
HOLMAN, W. F., Instructor in Mathematics, University of Minnesota, Minneapolis, Minn. ..... 1912
HOWE, C. D., Professor of Civil Engineering, Dalhousie University, Halifax, N. S. ..... 1912
HOWLETT, C. A. S., General Electric Co., Schenectady, N. Y. .... 1912
HUTCHINS, R. E., Instructor in Civil Engineering, Brown University, Providence, R. I. ..... 1912
JAMES, L. V., Instructor in Electrical Engineering, University of Illinois, Urbana, Ill. ..... 1912
KENISON, ERVIN, Assistant Professor of Drawing and Descriptive Geometry, Massachusetts Institute of Technology, Boston, Mass. 1912
KING, CARL, Instructor in Material of Construction, Wentworth Institute, Boston, Mass. ..... 1912
KINSEY, A. S., Supervising Instructor of Shop Practice, Stevens Institute of Technology, Hoboken, N. J. ..... 1912
KNAPP, E. R., Professor of Descriptive Geometry and Mechanical Drawing, Stevens Institute of Technology, Hoboken, N. J..... 1912
KNEALE, R. D., Professor of Civil Engineering, Montana State College of A. & M. Arts, Bozeman, Mont. ..... 1912
LAGERGREN, J. T., Lecturer of Machine Design, University of Toronto, Toronto, Ont., Canada. ..... 1912
LANE, A. C., Pearson Professor of Geology and Mineralogy, Tufts College, Tufts College, Mass. ..... 1912
LAPHAM, J. R., Assistant in Civil Engineering, Pennsylvania State College, State College, Pa. ..... 1912
LEKBERG, C. H., Instructor in Mechanical Laboratory, University of Maine, Orono, Me. ..... 1912
LETELLIER, L. S., Professor of Drawing, The Citadel, The Military College of South Carolina, Charleston, S. C. ..... 1912
LYON, W. V., Instructor in Electrical Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1912
MCCLELLAND, E. H., Technology Librarian, Carnegie Library of Pittsburgh, Pittsburgh, Pa. ..... 1912
MCCLELLAND, J. F., Professor of Mining Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1912
MARIS, J. M., Principal, School of Structural Engineering, International Correspondence Schools, Scranton, Pa. ..... 1912
MARSHALL, W. C., Assistant Professor of Machine Design, Sheffield Scientific School, Yale University, New Haven, Conn. ..... 1912
MASON, A. J., Engineer, Chicago Railway Exchange, 5715 Woodlawn Ave., Chicago, Ill. ..... 1912
MICHIE, J. N., Assistant Professor of Mathematics, Texas, A. & M. College, College Station, Texas. ..... 1912

MICKEY, C. E., Adjunct Professor of Applied Mechanics and Machine Design, University of Nebraska, Lincoln, Nebr. .... 1912

MILLER, H. W., Associate in General Engineering Drawing, University of Illinois, Urbana, Ill. ..... 1912

MOODY, L. F., Assistant Professor of Mechanical Engineering, Rensselaer Polytechnic Institute, Troy, N. Y. ..... 1912

MORRISON, I. F., Lecturer in Civil Engineering, University of Alberta, Edmonton, South Alta, Canada ..... 1912

MUSTARD, J. H., Works School Instructor, Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. ..... 1912

NYSWANDER, R. E., Professor of Physics, University of Denver, Denver, Colo. ..... 1912

O'NEILL, J. F., Instructor in Mechanic Arts, Massachusetts Institute of Technology, Boston, Mass. ..... 1912

O'SHAUGHNESSY, LOUIS, Instructor in Mathematics, University of Pennsylvania, Philadelphia, Pa. ..... 1912

OWEN, C. H., Principal of the Apprentice Trade School, The Warner & Swasey Company Trade School, Cleveland, O. ..... 1912

PARMLY, CHAS. H., Associate Professor of Physics, The College of the City of New York, New York City ..... 1912

PARR, S. W., Professor of Applied Chemistry, University of Illinois, Urbana, Ill. ..... 1912

PASSANO, L. M., Assistant Professor of Mathematics, Massachusetts Institute of Technology, Boston, Mass. ..... 1912

PENNOCK, R. M., Instructor in Mechanical Engineering, Pennsylvania State College, State College, Pa. ..... 1912

PERTSCH, J. G. JR., Instructor in Electrical Engineering, Cornell University, Ithaca, N. Y. ..... 1912

POLK, ANDERSON, Associated with The Lowe Brothers Co., of Dayton, O., 10 Elmwood Road, Roland Park, Baltimore, Md. ..... 1912

POND, F. J., Professor of Chemistry and Director of Chemical Laboratory, Stevens Institute of Technology, Hoboken, N. J. 1912

PORTER, CHAS. T., Instructor in Mechanical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn ..... 1912

PORTER, F. M., Instructor in Engineering Drawing, University of Illinois, Urbana, Ill... ..... 1912

PRENTICE, D. B., Assistant Instructor of Mechanical Engineering, Sheffield Scientific School, Yale University, New Haven, Conn. 1912

PROCTER, J. H., Instructor in Electrical Engineering, Texas A. & M. College, College Station, Texas ..... 1912

RICHARDSON, G. R., Instructor in Steam Engineering, Franklin Union, Boston, Mass. ..... 1912

RIDDERVOLD, A. S., Assistant Professor of Civil Engineering, University of Nebraska, Lincoln, Nebr. ..... 1912

ROBERTS, T. M., Professor of Electrical Engineering, Delaware College, Newark, Del. ..... 1912

RODGERS, L. J., Instructor in Machine Shop Practice, Wentworth Institute, Boston, Mass. ..... 1912

ROLLINS, A. P., Assistant Engineer, Medina Irrigation Co., San Antonio, Texas ..... 1912

ROLLINS, E. B., Assistant Professor of Electrical Engineering, Tufts College, Tufts College, Mass. ..... 1912

SANBORN, F. B., Professor of Civil Engineering, Tufts College, Tufts College, Mass. ..... 1912

SCHWARZE, C. T., Assistant Professor of Civil Engineering, Cooper Union, New York, N. Y. ..... 1912

SMALLWOOD, J. C., Associate Professor of Mechanical Engineering, Syracuse University, Syracuse, N. Y. ..... 1912

SORENSEN, R. W., Professor of Electrical Engineering, Throop Polytechnic Institute, Pasadena, Calif. ..... 1912

STEELE, J. N., Instructor of Foundry Work, Jersey City Technical High School, Jersey City, N. J. ..... 1912

STILLWELL, L. B., Consulting Engineer, 100 Broadway, New York, N. Y. ..... 1912

SULLIVAN, GEO. L., Professor of Mechanical Engineering, Santa Clara College, Santa Clara, Calif. ..... 1912

SUTTIE, R. H., Assistant Instructor in Civil Engineering, Sheffield Scientific School, Yale University, New Haven, Conn ..... 1912

SWEENY, F. R. I., Assistant Professor of Civil Engineering, Clemson Agricultural College, Clemson College, S. C. ..... 1912

TAYLOR, L. B., 131 Westmont Ave., Haddonfield, N. J. ..... 1912

TEMPLE, W E. S., Assistant Professor of Electrical Engineering, University of Pennsylvania, Philadelphia, Pa. ..... 1912

THOMAS, CHAS. W., Instructor in Mechanical Drawing, University of Wisconsin, Madison, Wis. ..... 1912

TRAILL, J. J., Lecturer in Hydraulics, University of Toronto, Toronto, Ont., Canada ..... 1912

TUCKER, J. I., Associate Professor and Director of the School of Civil Engineering, University of Oklahoma, Norman, Okla. .. 1912

TYRRELL, H. G., Consulting Engineer and Author, 540 Judson Ave., Evanston, Ill. ..... 1912

VAN HAGAN, L. F., Assistant Professor of Railway Engineering, University of Wisconsin, Madison, Wis. ..... 1912

WAGNER, W. C., Instructor in the Department of Electrical Engineering, University of Washington, Seattle, Wash. ..... 1912

WALKER, WM. H., Professor of Chemical Engineering, Massachusetts Institute of Technology, Boston, Mass. ..... 1912

WEBB, H. E., Head of the Department of Mathematics, Central Commercial and Manual Training High School, Newark, N. J. 1912

WHITAKER, M. C., Professor of Industrial and Engineering Chemistry, Columbia University, New York, N. Y. ..... 1912

WICKENDEN, WM. E., Assistant Professor of Electrical Engineering, Massachusetts Institute of Technology, Boston, Mass. .. 1912

WILLIS, A. J., Instructor in Civil Engineering, Cooper Union, New York, N. Y. ..... 1912

WILLSON, F. G., Instructor in Electrical Engineering, University of Illinois, Urbana, Ill. ..... 1912

WILSON, GEO. S., Assistant Professor in Mechanical Engineering, University of Washington, Seattle, Wash. ..... 1912

WYMAN, F. T., Chief Electrical Engineer, Pittsburgh Transformer Co., Pittsburgh, Pa. ..... 1912

## WITHDRAWN.

(Cancel in year book.)

Bickford, H. C.; Blaker, Ernest; Denton, J. E.; Fogg, B. G.; Frost, F. W.; Gardner, Henry; Hall, E. H.; Jones, F. S.; Kellogg, O. D.; Lanza, Gaetano; LeBaron, J. F.; Marks, W. D.; Maver, William; Nunn, P. N.; Pegram, G. H.; Pratt, C. M.; Pratt, F. B.; Querbach, Earl; Shaw, J. B.; Trask, B. E.; Wheeler, Earl, and Wilson, D. T.

## DECEASED.

(Cancel in year book.)

Bovey, H. T.; Curtis, N. P., and Webb, J. B.

# GEOGRAPHICAL DISTRIBUTION OF MEMBERS.

Members are classified in accordance with the addresses given in the membership list. Under each state the names of all cities in which members are located are printed in black-faced type and arranged alphabetically. If there are non-teachers in a city, their names are printed first after the word city in parentheses. Then follow the educational institutions in alphabetical order, the names being enclosed in parentheses. Finally the names of members are given in alphabetical order. If there is more than one non-teacher in a given city, or more than one member in an educational institution, the number is given at the end of the list.

**Alabama.—Auburn:** (Ala. Polytech.) R. L. Brown; B. H. Crenshaw; C. R. Hixon; G. N. Mitcham; C. C. Thach; A. L. Thomas; J. J. Wilmore; (7). **Tuscaloosa:** (Univ. of Ala.) E. B. Kay; B. F. Lovelace; H. A. Sayre; F. H. Sibley; Gustav Wittig; (5).

**Arizona.—Tucson:** (Univ. of Ariz.) W. W. Henley.

**Arkansas.—Fayetteville:** (Univ. of Ark.) W. N. Gladson; J. J. Knoch; V. P. Knott; Brainerd Mitchell, Jr.; A. A. Steel; B. N. Wilson; (6).

**California.—Berkeley:** (Univ. of Cal.) S. B. Christy; Chas. Derleth, Jr.; M. W. Haskell; W. J. Raymond; T. B. Sears; (5). **Claremont:** (Pomona College) G. G. Hitchcock. **Los Angeles:** (City) J. D. Schuyler. (S. Cal. Univ.) C. W. Lawrence; J. G. Van Zandt; (2). **Pasadena:** (Throop Polytech.) G. A. Damon; H. C. Van Buskirk; (2). (Pasadena High School) H. T. Clifton. **San Francisco:** (City) F. H. Tibbetts. **Stanford Univ.:** (Leland Stanford Jr. Univ.) S. B. Charters, Jr.; W. F. Durand; L. M. Hoskins; C. D. Marx; H. J. Ryan; (5).

**Colorado.—Boulder:** (Univ. of Colo.) H. S. Evans; J. A. Hunter; M. S. Ketchum; C. C. Williams; H. C. Woods; (5). **Colorado Springs:** (Colo. Coll.) Florian Cajori; G. B. Thomas; (2). **Denver:** (City) G. G. Anderson; L. G. Carpenter; (2). **Fort Collins:** (Colo. State Ag. Coll.) F. A. DeLay; J. W. Lawrence; C. A. Lory; R. L. Parshall; (4). **Golden:** (Colo. Sch. of Mines) V. C. Alderson.

**Connecticut.—New Haven:** (Yale Univ.) S. E. Barney; L. P. Breckenridge; R. M. Chittenden; A. J. Du Bois; C. S. Farnham; F. S. Jones; E. H. Lockwood; H. B. North; J. W. Roe; C. F. Scott; H. L. Seward; P. F. Smith; J. C. Tracy; L. P. Wheeler; (14).

**Delaware.—Newark:** (Del. Coll.) G. A. Harter; F. H. Robinson; T. L. Sturges, Jr.; (3). **Wilmington:** (City) T. C. du Pont.

**District of Columbia.—Washington:** (City) W. H. Bixby; N. C. Grover; J. A. Holmes; B. K. Philp; Earl Wheeler; (5). Carnegie Institution) H. D. Frary; R. S. Woodward; (2). (George Washington Univ.) E. V. Dunstan; H. L. Hodgkins; (2). (McKinley H. S.) H. P. Noble.

**Florida.—Gainesville:** (Univ. of Fla.) J. R. Benton; N. H. Cox; E. S. Walker; J. W. Zeller; (4).

**Georgia.—Atlanta:** (Ga. School of Tech.) W. H. Emerson. **Savannah:** (City) R. S. King.

**Idaho.—Montpelier:** (City) A. J. Jobson. **Moscow:** (City) S. E. Hutton. (Univ. of Idaho) G. L. Larson; C. N. Little; R. S. McCaffery; D. B. Steinman; C. L. von Ende; (5).

**Illinois.—Chicago:** (City) B. J. Arnold; Onward Bates; M. R. Bowerman; H. J. Burt; W. M. Camp; H. D. Carpenter; H. C. Coffeen; W. W. Curtis; J. W. Dietz; H. B. Dirks; Harwood Frost; J. F. Gilchrist; H. P. Gillette; J. C. Hallstead; F. W. Lane; S. G. McMeen; Ralph Modjeski; A. H. Nelson; L. G. Parker; R. F. Schuchardt; E. C. Shankland; A. B. Smith; C. L. Strobel; Paul Willis; J. G. Wray; O. B. Zimmerman; (26). (Armour Inst.) A. H. Anderson; W. E. Barrows, Jr.; E. H. Freeman; A. J. Frith; C. E. Paul; H. M. Raymond; (6). (Univ. of Chicago) Carl Kinsley; M. R. Richardson; (2). (Lewis Inst.) H. E. Cobb; C. E. DePuy; A. W. Moseley; (3). (Loyola Univ.) J. D. Newton. **Decatur:** (J. Millikin Univ.) G. F. Eckhard; W. J. Risley; (2). **Evanston:** (Northwestern Univ.) O. H. Basquin; W. C. Bauer; J. F. Hayford; W. H. Burger; (4). **Fisher:** T. H. Hewerdine. **Peoria:** (Bradley Polytech.) C. E. Comstock; F. H. Evans; (2). **Urbana:** (Univ. of Ill.) I. O. Baker; E. J. Berg; Morgan Brooks; J. M. Bryant; A. M. Buck; A. R. Crathorne; J. A. Dent; F. O. Dufour; W. V. Dunkin; M. L. Enger; S. P. Farwell; V. R. Fleming; F. S. Foote, Jr.; N. B. Garver; G. A. Goodenough; W. F. M. Goss; G. C. Habermeyer; C. T. Knipp; O. A. Leutwiler; J. C. Lund; C. W. Malcolm; F. M. Mann; F. W. Marquis; H. F. Moore; H. E. Murdock; C. E. Noerenberg; E. B. Paine; G. W. Pickels, Jr.; C. Russ Richards; J. J. Richey; N. C. Ricker; H. O. Rugg; E. C. Schmidt; J. B. Shaw; J. E. Smith; R. K. Steward; H. H. Stoek; A. N. Talbot; L. J. Towne; J. N. Vedder; E. H. Waldo; J. M. White; (42).

**Indiana.—Lafayette:** (Purdue Univ.) C. H. Benjamin; A. D. Du Bois; R. G. Dukes; L. E. Endsley; P. N. Evans; T. T. Eyre; H. O. Garman; C. F. Harding; W. K. Hatt; A. M. Kenyon; C. H. Lawrance; A. P. Poorman; L. D. Rowell; A. N. Topping; W. P. Turner; C. B. Veal; G. A. Young; (17). **Terre Haute:** (Rose Polytech.) M. A. Howe; C. L. Mees; F. C. Wagner; (3). **Valparaiso:** (Valparaiso Univ.) H. B. Brown.

**Iowa.—Ames:** (Iowa State College) S. W. Beyer; M. P. Cleghorn; M. I. Evinger; F. A. Fish; H. C. Ford; H. W. Gray; A. H. Hoffman; E. E. King; Anson Marston; W. H. Meeker; Adolph Shane; L. B. Spinney; R. S. Wallis; (13). **Davenport:** (City) J. F. Porter. **Iowa City:** (State Univ. of Ia.) A. H. Ford; F. G. Higbee; B. J. Lambert; W. G. Raymond; A. G. Smith; G. W. Stewart; S. M. Woodward; (7). **Mt. Vernon:** (Cornell Coll.) F. M. McGaw; S. N. Williams; (2). **Waterloo:** (City) R. B. Slippy.

**Kansas.—Lawrence:** (Univ. of Kans.) C. I. Corp; B. J. Dalton; W. C. Hoad; F. O. Marvin; F. N. Raymond; H. A. Rice; G. C. Shaad; P. F. Walker; C. M. Young; (9). **Manhattan:** (Kans. State Ag. Coll.) L. E. Conrad; J. O. Hamilton; F. C. Harris; Chas. Jablow; Jacob Lund; E. B. McCormick; A. A. Potter; A. E. White; (8). **Topeka:** (City) A. A. Robinson.

**Kentucky.—Lexington:** (State Univ. of Ky.) F. P. Anderson; L. K. Frankel; W. E. Freeman; C. J. Norwood; (4).

**Louisiana.—Baton Rouge:** (La. State Univ.) T. W. Atkinson; A. M. Herget; E. W. Kerr; (3). **New Orleans:** (City) Alfred Raymond; B. E. Trask; (2). (Tulane Univ.) D. S. Anderson; W. H. P. Creighton; W. B. Gregory; (3).

**Maine.—Orono:** (Univ. of Maine) P. L. Bean; H. S. Boardman; S. D. Chambers; W. H. Herschel; A. C. Jewett; J. E. Kaulfuss; (6).

**Maryland.—Annapolis:** (U. S. Naval Academy) P. R. Alger. **Baltimore:** (City) W. W. Crosby; J. E. Greiner; W. A. Shoudy; (3). (Goucher Coll.) S. N. Taylor.

**Massachusetts.—Amherst:** (Mass. Ag. Coll.) J. E. Ostrander. **Boston:** (City) C. A. Chandler; W. L. Church; Leonard Metcalf; Everett Morss; W. B. Snow; C. A. Stone; F. P. Valentine; E. S. Webster; (8). (Franklin Union) J. W. Calnan; W. B. Russell; (2). (Mass. Inst. of Tech.) C. L. Adams; C. F. Allen; H. K. Barrows; R. D. Bradbury; C. B. Breed; A. E. Burton; C. E. Fuller; H. W. Hayward; H. O. Hofman; J. W. Howard; D. C. Jackson; W. A. Johnston; R. R. Lawrence; W. H. Lawrence; F. A. Laws; R. C. Maclaurin; L. E. Moore; C. L. Norton; A. A. Noyes; C. F. Park; Harold Pender; Dwight Porter; M. W. Pullen; R. H. Richards; A. G. Robbins; H. L. Seaver; W. T. Sedgwick; C. M. Spofford; G. W. Swett; H. P. Talbot; H. W. Tyler; (31). (Wentworth Inst.) W. H. Timbie; A. L. Williston; (2). **Brookline:** (City) Desmond FitzGerald. **Cambridge:** (Harvard Univ.) C. A. Adams; H. E. Clifford; H. G. Crane; R. T. Fisher; E. H. Hall; I. N. Hollis; H. J. Hughes; E. V. Huntington; L. J. Johnson; F. L. Kennedy; L. S. Marks; A. E. Norton; J. S. Pray; H. L. Smyth; G. F. Swain; (15). **Dorchester Center:** (Dorchester H. S.) J. H. Hawes. **Lynn:** (City) M. W. Alexander; S. A. Moss; (2). **Pitts-**

**field:** (City) L. F. Blume; C. C. Chesney; J. M. Weed; (3). **South Yarmouth:** (City) C. H. Davis. **Tufts College:** (Tufts Coll.) G. C. Anthony; G. F. Ashley; C. D. Bray; H. H. Carroll; C. H. Chase; S. C. Earle; W. L. Hooper; E. H. Rockwell; C. E. Stewart; C. L. Svensen; (10). **Watertown:** (City) H. L. Whittemore. **Winchester:** (City) C. T. Main. **Worcester:** (Clark Coll.) J. C. Hubbard; F. B. Williams; (2). (Worcester Polytech. Inst.) C. M. Allen; W. W. Bird; A. D. Butterfield; J. C. Davis; A. W. French; H. C. Ives; C. D. Knight; J. O. Phelon; H. B. Smith; A. L. Smith; W. D. Stearns; (11).

**Michigan.—Ann Arbor:** (City) G. S. Williams. (Univ. of Mich.) J. R. Allen; J. A. Bursley; W. H. Butts; M. E. Cooley; C. S. Denison; H. H. Higbie; W. L. Miggett; J. A. Moyer; H. C. Sadler; Alexander Ziwet; S. J. Zowski-Zwierzchowski; (11). **Calumet:** (City) Jas. MacNaughton. **Detroit:** A. C. Mehrtens. **East Lansing:** (Mich. Ag. Coll.) Warren Babcock; G. W. Bissell; J. T. Buser; C. D. Curtiss; G. A. Kelsall; E. J. Kunze; W. L. Lodge; H. E. Marsh; J. L. Morse; Chace Newman; A. M. Ockerblad; J. A. Polson; A. S. Rosing; A. R. Sawyer; J. E. Shaw; O. L. Snow; H. K. Vedder; W. B. Wendt; V. T. Wilson; (19). **Houghton:** (City) L. L. Hubbard. (Mich. Coll. of Mines) Wm. Anderson; G. L. Christensen; Jas. Fisher, Jr.; E. D. Grant; F. W. McNair; T. E. Richards; F. W. Sperr; (7). **Ishpeming:** (City) M. M. Duncan. **Lapeer:** (City) Fred Morley. **Marquette:** (City) Wm. Longyear. **Painesdale:** (City) F. W. Denton. **Vulcan:** (City) Wm. Kelly.

**Minnesota.—Aurora:** (City) O. B. Poore. **Minneapolis:** (Univ. of Minn.) Frederic Bass; W. E. Brooke; E. H. Comstock; F. H. Constant; H. H. Dalaker; H. T. Eddy; J. J. Flather; G. B. Frankforter; J. B. Frear; A. E. Haynes; W. H. Kavanaugh; F. J. Kircher; W. H. Kirchner; J. Van S. Martenis; B. L. Newkirk; C. W. Nichols; J. I. Parcel; G. C. Priester; W. H. Richards; F. B. Rowley; W. T. Ryan; F. C. Shenehon; G. D. Shepardson; S. C. Shipley; C. F. Shoop; F. W. Springer; Anthony Zeleny; O. S. Zelner; (28).

**Mississippi.—Agricultural College:** (Miss. A. & M. Coll.) C. E. Ard; R. W. Gay; C. E. Reid; B. M. Walker; (4). **University:** (Univ. of Miss.) Alfred Hume.

**Missouri.—Columbia:** (Univ. of Mo.) L. M. Defoe; A. E. Flowers; E. R. Hedrick; H. Wade Hibbard; A. L. Hyde; O. D. Kellogg; W. A. Miller; T. J. Rodhouse; H. B. Shaw; F. P. Spalding; O. M. Stewart; A. L. Westcott; (12). **Kansas City:** (City) C. S. Burns; W. W. Colpitts; J. L. Harrington; I. G. Hedrick; J. A. Lahmer; D. A. Molitor; J. E. Muhlfeld; J. A. L. Waddell; (8). (M. T. H. S.) J. M. Kent. **Rolla:** (School of Mines) L. E. Garrett; A. L. McRae; L.

E. Young; (3). **St. Louis:** (City) A. C. Einstein; F. Y. Parker; (2). (Christian Brothers' Coll.) Brother Hubert Lewis. (McKinley H. S.) S. H. Moore. (Washington Univ.) F. A. Berger; E. G. Hooper; G. W. Lamke; A. S. Langsdorf; E. L. Ohle; E. O. Sweetser; J. L. Van Ornum; C. A. Waldo; C. M. Woodward; (9).

**Montana.—Bozeman:** (Mont. Ag. Coll.) C. S. Dearborn; J. A. Thaler; (2). **Missoula:** (Univ. of Mont.) P. S. Biegler; A. W. Richter; (2).

**Nebraska.—Lincoln:** (Univ. of Nebr.) L. W. Chase; G. R. Chatburn; E. W. Davis; J. D. Hoffman; V. L. Hollister: G. H. Morse; W. S. Payne; J. E. Rasmusen; L. A. Scipio; P. K. Slaymaker; O. V. P. Stout; (11).

**Nevada.—Reno:** (Univ. of Nev.) J. E. Stubbs.

**New Hampshire.—Durham:** (N. H. Coll.) A. F. Nesbit; C. H. Pettee; (2). **Hanover:** (Dartmouth Coll.) Robert Fletcher; C. N. Haskins; C. A. Holden; S. L. Ruggles; (4).

**New Jersey.—Elizabeth:** (City) G. A. Hamilton. **Harrison:** (City) S. W. Ashe. **Hoboken:** (Stevens Inst. of Tech.) R. F. Deimel; J. E. Denton; F. DeR. Furman; A. F. Ganz; C. O. Gunther; L. A. Hazeltine; A. C. Humphreys; C. B. LePage; L. A. Martin, Jr.; F. L. Pryor; Adam Riesenberger; J. B. Webb; (12) **Jamesburg:** (City) A. C. Prime. **Montclair:** (City) W. J. Harahan; Wm. Kent; (2). **Newark:** (City) Philander Betts; R. E. Danforth; Edw. Weston; (3). **New Brunswick:** (Rutgers Coll.) R. C. H. Heck; A. R. Johnson; Richard Morris; S. A. Stephenson, Jr.; F. F. Thompson; A. A. Titsworth; (6). **Perth Amboy** (City) A. H. Gill. **Princeton:** (Princeton Univ.) H. B. Fine; H. S. S. Smith; (2). **Ramsey:** (City) Emerson McMillin. **South Orange:** (City) C. P. Poole.

**New Mexico.—Agricultural College:** (N. M. Ag. Coll.) F. L. Bixby; C. T. Hagerty; A. B. Sage; L. B. Selby; (4). **Turley, San Juan Co.:** (City) O. J. Turley.

**New York.—Albany:** (City) J. A. Bensel. **Barneveld:** (City) H. A. Gehring. **Brooklyn:*** (City) W. P. Gerhard; C. R. Grimm; (2). **Buffalo:** (City) T. Guilford Smith. (Tech. H. S.) C. C. Bishop. **Ithaca:** (Cornell Univ.) W. N. Barnard; F. A. Barnes; Ernest Blaker; S. L. Boothroyd: A. W. Browne; R. C. Carpenter; I. P. Church; W. R. Cornell; C. L. Crandall; L. M. Dennis; J. F. H. Douglas; E. E. Haskell; H. S. Jacoby; Vladimir Karapetoff; O. M. Leland; G. S. Macomber; Robertson Matthews; F. A. Molby: H. H. Norris; A. R. Nottingham; E. W. Rettger; F. K. Richtmyer; F. J. Seery; F. R. Sharpe; J. H. Tanner; C. H. Tower; T. C. Ulbricht; C. L. Walker; E. H. Wood; (29). **Mas-**

* Educational institutions in Brooklyn are listed under New York, of which Brooklyn is a borough.

**sena:** (City) B. F. Groat. **Minetto, Oswego Co.:** R. M. Mark. **New York City:** (City) E. A. Averill; M. R. Bump; Edw. Caldwell; Andrew Carnegie; J. J. Carty; C. A. Coffin; E. L. Corthell; E. L. Coster; H. L. Doherty; Louis Duncan; Gano Dunn; M. M. Foss; F. W. Frost; Henry Gardner; F. B. Gilbreth; A. H. Goldingham; F. A. Halsey; P. W. Henry; Rudolph Hering; A. S. Hibbard; I. G. Hoagland; C. W. Hunt; L. D. Huntoon; D. S. Jacobus; E. S. Jarrett; Bassett Jones, Jr.; Frank Koester; J. W. Lieb, Jr.; A. S. McAllister; W. D. Marks; T. C. Martin; Wm. Maver, Jr.; Mansfield Merriman; G. E. Molleson; J. C. Ostrup; G. H. Pegram; E. L. Powers; E. F. Roeber; M. C. Rorty; W. F. Schaphorst; G. F. Sever; G. H. Shepard; J. M. Smith; F. J. Sprague; J. F. Stevens; F. H. Stillman; E. R. Storm; H. G. Stott; J. B. Swinney; Jas. Thompson; D. L. Turner; J. C. Wait; W. D. Weaver; G. C. Whipple; Jas. G. White; W. O. Wiley; (56). (Brooklyn M. T. H. S.) F. B. Abbott. (Brooklyn Polytech.) A. A. Adler; F. W. Atkinson; W. J. Berry; W. D. Ennis; C. A. Green; C. W. Hudson; Samuel Sheldon; (7). (Columbia Univ.) Adolph Black; A. H. Blanchard; C. H. Burnside; W. H. Burr; H. B. Drowne; F. A. Goetze; C. E. Lucke; J. H. Morecroft; H. S. Munroe; M. I. Pupin; W. I. Slichter; G. V. Wendell; J. P. J. Williams; (13). (Cooper Union) Albert Ball; H. C. Enders; F. E. Foss; F. M. Hartmann; Chas. Russell Richards; (5). (New York Univ.) W. R. Bryans; Alexander Haring; C. E. Houghton; C. H. Snow; (4). (Pratt Inst.) W. A. Ballou; S. S. Edmands; W. H. Freedman; J. M. Jameson; E. H. Koch, Jr.; J. P. Kotteamp; R. E. Noyes; C. M. Pratt; F. B. Pratt; G. D. Pratt; J. A. Randall; S. R. Schealer; A. W. Smith; E. F. Stevens; (14). (Stuyvesant H. S.) C. H. Sanford. **Potsdam:** (Clarkson School of Tech.) J. P. Brooks; Hugh Miller; L. K. Russell; W. M. Towle; (4). **Rochester:** (City) J. C. Parker. **Schenectady:** (City) H. M. Hobart; G. E. Munroe; C. W. Parks; A. L. Rohrer; C. W. Stone; (5). (Union Univ.) J. A. C. Callan; E. E. F. Creighton; O. J. Ferguson; W. A. Garrison; O. H. Landreth; C. P. Steinmetz; (6). **Syracuse:** (Syracuse Univ.) J. E. Gramlich; R. A. Porter; (2). **Troy:** (Rensselaer Poly. Inst.) A. M. Greene, Jr.; G. S. Thompson; E. A. Touceda; (3). **Yonkers:** (City) J. E. Wadsworth.

**North Carolina.—Chapel Hill:** (Univ. of N. C.) P. H. Daggett; A. H. Patterson; (2). **West Raleigh:** (N. C. Ag. Coll.) W. H. Browne, Jr.; W. T. Ellis; H. E. Satterfield; (3).

**North Dakota.—Agricultural College:** (N. D. Ag. Coll.) C. I. Gunness; R. H. Slocum; (2). **Grand Forks:** (Univ. of N. D.) E. J. Babcock; A. J. Becker; E. F. Chandler; C. H. Crouch; (4).

**Ohio.—Ada:** (Ohio Northern Univ.) D. D. Ewing; T. J. Smull, Jr.; (2). **Chardon:** (City) J. F. LeBaron. **Cincinnati:** (City) F. A. Geier. (Univ. of Cincinnati) F. E. Ayer; J. T. Faig; A. L. Jenkins; J. E. Root; Herman Schneider; A. M. Wilson; (6). **Cleveland:** (City) E. J. Edwards; W. O. Henderer; E. P. Hyde; W. K. Monroe; (4). (Case School of A. S.) F. M. Comstock; H. B. Dates; C. L. Eddy; R. H. Fernald; T. M. Focke; C. S. Howe; G. H. Hunt; D. C. Miller; Dalton Moomaw; F. H. Neff; J. H. Nelson; W. J. Sweetser; J. M. Telleen; C. F. Thomas; F. H. Vose; D. T. Wilson; A. S. Wright; (17). (Cleveland Tech. H. S.) R. L. Short. (Columbus Trades School) J. H. Gill. (Ohio State Univ.) J. E. Boyd; J. N. Bradford; F. C. Caldwell; E. F. Coddington; F. H. Eno; T. E. French; A. C. Harper; E. A. Hitchcock; J. H. Hunt; F. W. Ives; Horace Judd; W. A. Knight; G. W. McCoard; W. T. Magruder; Robert Meiklejohn; C. T. Morris; Edw. Orton, Jr.; F. E. Sanborn; C. E. Sherman; K. D. Swartzel; K. B. Ward; O. E. Williams; J. R. Withrow; (23). **Dayton:** (City) E. A. Deeds. **Granville:** (Denison Univ.) E. E. Lawton. **Ravenna:** (City) T. C. Mendenhall.

**Oklahoma.—Stillwater:** (Okla. A. & M. Coll.) Alfred Boyd.

**Oregon.—Corvallis:** (Ore. Ag. Coll.) G. A. Covell; W. A. Hillebrand; L. F. Wooster; (3). **Eugene:** (Univ. of Ore.) C. W. Converse; F. G. Frink; E. H. McAlister; (3). **Portland:** (City) H. B. Hastings; Chas. McGonigle; F. H. Murphy; W. S. Turner; (4).

**Pennsylvania.—Allentown:** (City) Russell R. Ux. **Ambridge:** (City) Earl Querbach. **Chestnut Hill:** (C. H. Academy) C. H. Harper. **Easton:** (Lafayette Coll.) J. M. Porter. **Erie:** (City) J. W. Hughes; H. C. Mitchell; (2). **Gettysburg:** (Pennsylvania Coll.) R. S. Kirby. **Haverford:** (Haverford Coll.) L. H. Rittenhouse. **Lewisburg:** (Bucknell Univ.) F. E. Burpee; C. A. Lindemann; (2). **Philadelphia:** (City) A. W. Ayer; E. W. Bacon; H. C. Bickford; A. T. Bruegel; M. L. Cooke; Chas. Day; Henry Hess; R. R. Keely; Gaetano Lanza; Tinius Olsen; S. T. Wagner; (11). (Drexel Inst.) H. N. Benkert; W. B. Creagmile; A. J. Rowland; E. B. Smith; (4). (Central Manual Training H. S.) L. F. Rondinella. (Univ. of Pa.) Wm. Easby, Jr.; H. B. Evans; C. W. Gremple; E. L. Ingram; Edgar Marburg; H. W. Spangler; J. V. Stanford; (7). (Franklin Inst.) R. B. Owens. **Pittsburgh:** (City) C. E. Downton; A. K. Hubbard; O. P. Hood; Albert Kingsbury; P. M. Lincoln; H. H. McClintic; Ben McCrum; D. W. McNaugher; L. A. Osborne; F. L. O. Wadsworth; P. L. Wolfel; (11). (Pittsburgh Central H. S.) P. M. Dysart. (Carnegie Tech. Schools) H. T. R. Aude; C. B. Connelley; A. A. Hamerschlag; J. H. James; J. H. Leete; F. M. McCullough; W. E. Mott; Thos. Pilkington; N. C. Riggs; L. B.

Smith; H. R. Thayer; A. H. Willett; A. J. Wurts; (13). (Casino Tech. Night School) C. R. Dooley. (Univ. of Pittsburgh) E. E. Bankson; F. L. Bishop; J. C. Bland; A. E. Frost; J. H. Smith; M. E. Wadsworth; (6). **Scranton:** (I. C. S.) J. J. Clark; G. H. Fisher; (2). **South Bethlehem:** (Lehigh Univ.) A. C. Callen; H. S. Drinker; Wm. Esty; R. J. Fogg; E. S. Foster; W. S. Franklin; A. W. Klein; P. A. Lambert; F. P. McKibben; Barry MacNutt; S. S. Seyfert; J. L. Stewart; C. L. Thornburg; W. L. Wilson; (14). **State College:** (Pa. State Coll.) J. P. Calderwood; R. A. Caughey; Hugo Deimer; H. V. Egbert; J. P. Jackson; C. P. Linville; J. A. Mease; H. B. Shattuck; E. E. Sparks; E. D. Walker; E. L. Waterman; R. I. Webber; J. B. Whitmore; A. J. Wood; (14). **Swarthmore:** (Swarthmore Coll.) G. F. Blessing. **Tidioute:** (City) Ralph Rogers. **Wilkinsburg:** (City) H. W. Smith. **Williamson School:** (Williamson Free School of Mech. Trades) H. S. Bitting; J. A. Pratt; (2).

**Rhode Island.—Kingston:** (R. I. State Coll.) Paul Cloke. **Providence:** (City) W. A. Kennedy. (Brown Univ.) J. A. Brooks; N. F. Davis; J. E. Hill; W. H. Kenerson; J. J. Long; T. M. Phetteplace; O. E. Randall; (7).

**South Carolina.—Charleston:** (The Citadel) R. G. Thomas. **Clemson College:** (Clemson A. & M. Coll.) W. M. Riggs.

**South Dakota.—Brookings:** (S. D. State Coll.) B. B. Brackett; G. L. Brown; H. B. Mathews; H. C. Solberg; (4). **Vermillion:** (Univ. of S. D.) L. E. Akeley; A. B. McDaniel; (2).

**Tennessee.—Knoxville:** (City) F. R. Jones. (Univ. of Tenn.) Brown Ayres; W. W. Carson; (2). **Lebanon:** (Cumberland Univ.) W. H. Drane. **Memphis:** (City) L. G. Van Ness. **Nashville:** (Vanderbilt Univ.) W. H. Schuerman.

**Texas.—Austin:** (Univ. of Tex.) H. Y. Benedict; N. H. Brown; T. U. Taylor; (3). **Beaumont:** (City) A. C. Love. **College Station:** (Tex. A. & M. Coll.) F. C. Bolton; E. J. Fermier; F. E. Giesecke; J. W. Kidd; J. C. Nagle; R. J. Potts; Chas. Puryear; H. E. Smith; (8). **Dallas:** (City) A. C. Scott. **Fort Worth:** (City) J. B. Hawley.

**Utah.—Provo:** (City) V. Y. Davoud; P. N. Nunn; (2). **Salt Lake City:** (City) G. M. Bacon; Joseph Jenson; (2). (Univ. of Utah) E. H. Beckstrand; R. H. Bradford; W. C. Ebaugh; J. L. Gibson; T. P. Holt; A. A. Knowlton; R. R. Lyman; Joseph Merrill; F. J. Pack; (9).

**Vermont.—Burlington:** (Univ. of Vt.) J. W. Elliott; Edw. Robinson; Evan Thomas; R. D. Thomson; W. L. Upson; J. W. Votey; (6).

**Virginia.—Blacksburg:** (Va. Polytech. Inst.) W. E. Barlow; J. S. A. Johnson; R. A. Marr; L. S. Randolph; W. H. Rasche; (5).

**Lexington:** (Va. Military Inst.) E. W. Nichols; C. W. Watts; (2). (Washington & Lee Univ.) D. C. Humphreys.

**Washington.—Olympia:** (City) W. J. Roberts. **Pullman:** (Wash. State Coll.) O. L. Waller. **Seattle:** (City) Edwin Haviland. (Univ. of Wash.) Joseph Daniels; A. H. Fuller; G. I. Gavett; E. J. McCaustland; C. E. Magnusson; C. C. More; F. A. Osborn; Milnor Roberts; (8). **Spokane:** (City) J. C. Ralston. **Walla Walla:** (Whitman Coll.) W. A. Bratton; G. B. Dunmore; A. W. Hendrick; (3).

**West Virginia.—Morgantown:** (W. Va. Univ.) E. F. Church, Jr.; W. E. Dickinson; F. L. Emory; C. R. Jones; C. W. Waggoner; (5).

**Wisconsin.—Madison:** (Univ. of Wis.) Jas. Aston; M. C. Beebe; Edw. Bennett: C. F. Burgess; N. P. Curtis; E. C. Holden; R. McA. Keown; L. V. Ludy; J. G. D. Mack; E. R. Maurer; D. W. Mead; E. B. Norris; H. D. Orth; R. S. Owen; W. D. Pence; J. D. Phillips; L. E. Reber; J. W. Shuster; C. S. Slichter; L. S. Smith; C. C. Thomas; H. J. Thorkelson; F. E. Turneaure; J. H. Vosskuehler; J. W. Watson; H. A. Watt; M. O. Withey; (27). **Milwaukee:** (City) G. H. Benzenberg; A. W. Berresford; C. F. Perry; David Van Alstyne; (4). (Marquette Univ.) J. C. Davis. **Oshkosh:** (City) H. W. Heidenger.

**Wyoming.—Laramie:** (Univ. of Wyo.) A. C. Boyle, Jr.; E. G. Hoefer; (2). **Powell:** (City) W. S. Aldrich.

**Australia.—Brisbane:** (Univ. of Queensland) A. J. Gibson. **Sydney:** (Univ. of Sydney) S. H. Barraclough.

**Brazil.—Porto Alegre:** (Escola de Engenharia) H. P. Rees. (Inst. Tech. Prof.) Joao Luderitz.

**Canada.—Halifax, N. S.:** (Nova Scotia Tech. Coll.) W. S. Ayars; F. M. Dawson; F. H. Sexton; (3). **Montreal, P. Q.:** (City) H. G. Kelley; Phelps Johnson; (2). (McGill Univ.) F. D. Adams; D. A. Murray; J. B. Porter; (3). **Toronto, Ont.:** (Univ. of Toronto) L. M. Arkley; John Galbraith; Peter Gillespie; H. E. T. Haultain; T. R. Rosebrugh; L. B. Stewart; (6). **Vancouver, B. C.:** (City) E. A. Stone. **Walkerville, Ont.:** (City) Willard Pope. **Winnipeg, Man.:** (Univ. of Man.) E. E. Brydone-Jack; J. W. Dorsey; (2). **Wolfville, N. S.:** (Acadia Univ.) P. W. Durkee.

**Chile.—Santiago:** (City) Enrique Cruchaga Ossa; Gaston Ossa; (2).

**China.—Tientsin:** (Imp. Pei-Yang Univ.) W. H. Adams; M. H. Peck; (2). **Wuhu:** (City) H. Berents.

**England.—London:** (City) H. T. Bovey; L. H. Fry; (2). **Sheffield:** (Univ. of Sheffield) Walter Swift.

**Hawaii.—Honolulu:** (City) A. R. Keller.

**Hungary.—Budapest:** (City) Kalman Mehely.

**India.—Parlakemidi:** (City) R. P. Iyer.

**Japan.—Tokyo:** (City) Sentaro Kondo; Toragoro Kondo; (2). (Tokyo Imp. Univ.) Isami Hiroi.

**Mexico.—Zamora, Michoacan:** (City) W. D. Appleton.

**Panama.—Culebra:** (City) Henry Goldmark; Edw. Schildhauer; (2).

**Philippine Islands.—Manila:** (City) F. A. Dalburg; E. L. Lundgren; (2).

**Russia.—St. Petersburg:** (Polytech. Inst.) M. A. deChatelain.

## GEOGRAPHICAL SUMMARY OF MEMBERS.

| | | | | | |
|---|---|---|---|---|---|
| Alabama | 12 | Mississippi | 5 | Virginia | 8 |
| Arizona | 1 | Missouri | 37 | Washington | 15 |
| Arkansas | 6 | Montana | 4 | West Virginia | 5 |
| California | 18 | Nebraska | 11 | Wisconsin | 33 |
| Colorado | 14 | Nevada | 1 | Wyoming | 3 |
| Connecticut | 14 | New Hampshire | 6 | Australia | 2 |
| Delaware | 4 | New Jersey | 33 | Brazil | 2 |
| District of Columbia | 10 | New Mexico | 5 | British Columbia | 1 |
| Florida | 4 | New York | 160 | Canada | 18 |
| Georgia | 2 | North Carolina | 5 | Chile | 2 |
| Idaho | 7 | North Dakota | 6 | China | 3 |
| Illinois | 89 | Ohio | 59 | England | 3 |
| Indiana | 21 | Oklahoma | 1 | Hawaii Territory | 1 |
| Iowa | 25 | Oregon | 10 | Hungary | 1 |
| Kansas | 18 | Pennsylvania | 101 | India | 1 |
| Kentucky | 4 | Rhode Island | 9 | Japan | 3 |
| Louisiana | 7 | South Carolina | 2 | Mexico | 1 |
| Maine | 6 | South Dakota | 6 | Panama | 2 |
| Maryland | 5 | Tennessee | 6 | Philippine Islands | 2 |
| Massachusetts | 92 | Texas | 14 | Russia | 1 |
| Michigan | 46 | Utah | 12 | Total | 1040 |
| Minnesota | 29 | Vermont | 6 | | |

## SUMMARY OF OCCUPATION.

| Classification | Teachers | | | Practitioners | | |
|---|---|---|---|---|---|---|
| | 1909 | 1910 | 1911 | 1909 | 1910 | 1911 |
| Architecture | 4 | 6 | 7 | 0 | 1 | 1 |
| Biology | 1 | 8 | 1 | 0 | 0 | 0 |
| Chemistry | 10 | 21 | 16 | 1 | 0 | 0 |
| Civil Engineering | 160 | 172 | 144 | 22 | 67 | 82 |
| Deans and Directors only | 28 | 37 | 81 | 0 | 0 | 0 |
| Drawing | 42 | 41 | 54 | 0 | 3 | 2 |
| Electrical Engineering | 81 | 96 | 101 | 15 | 11 | 38 |
| English | 0 | 0 | 10 | 0 | 0 | 0 |
| Journalists and Publishers | 0 | 0 | 0 | 15 | 15 | 25 |
| Landscape Architecture | 1 | 1 | 1 | 0 | 0 | 0 |
| Manual Training | 4 | 1 | 5 | 0 | 0 | 0 |
| Mathematics | 63 | 78 | 77 | 1 | 0 | 0 |
| Mechanical Engineering | 117 | 144 | 124 | 27 | 32 | 48 |
| Mechanics | 25 | 41 | 41 | 0 | 0 | 0 |
| Mining Engineering | 28 | 24 | 26 | 4 | 4 | 5 |
| Physics | 36 | 47 | 47 | 0 | 0 | 0 |
| Presidents | 23 | 22 | 18 | 0 | 9 | 0 |
| Railway Engineering | 0 | 0 | 20 | 0 | 0 | 0 |
| Shopwork | 6 | 16 | 12 | 0 | 0 | 0 |
| Trades-school | 4 | 0 | 0 | 0 | 0 | 0 |
| Unclassified | 9 | 12 | 0 | 20 | 29 | 54 |
| Professors who are also Deans | (54) | (55) | (46) | | | |
| Total | 642 | 767 | 785 | 105 | 171 | 255 |

## INSTITUTIONS REPRESENTED.

| | Members 1909 | 1910 | 1911 |
|---|---|---|---|
| Acadia University, Wolfville, Nova Scotia | 0 | 0 | 1 |
| Alabama Polytechnic Institute, Auburn, Ala. | 6 | 7 | 7 |
| Alabama, University of, Tuscaloosa, Ala. | 1 | 4 | 5 |
| Arizona, University of, Tucson, Ariz. | 1 | 1 | 1 |
| Arkansas, University of, Fayetteville, Ark. | 5 | 6 | 6 |
| Armour Institute of Technology, Chicago, Ill. | 7 | 8 | 6 |
| Bradley Polytechnic Institute, Peoria, Ill. | 2 | 2 | 2 |
| Brooklyn Manual Training H. S., Brooklyn, N. Y. | 1 | 1 | 1 |
| Brooklyn Polytechnic Institute, Brooklyn, N. Y. | 4 | 7 | 7 |
| Brown University, Providence, R. I. | 7 | 8 | 7 |
| Bucknell University, Lewisburg, Pa. | 1 | 2 | 2 |
| Buffalo Technical H. S., Buffalo, N. Y. | 0 | 0 | 1 |
| California, University of, Berkeley, Cal. | 4 | 5 | 5 |
| Carnegie Institution, Washington, D. C. | 1 | 2 | 2 |
| Carnegie Technical Schools, Pittsburgh, Pa. | 7 | 13 | 13 |
| Case School of Applied Science, Cleveland, O. | 14 | 19 | 17 |
| Casino Technical Night School, E. Pittsburgh, Pa. | 0 | 1 | 1 |
| Chestnut Hill Academy, Chestnut Hill, Pa. | 0 | 1 | 1 |
| Chicago, University of, Chicago, Ill. | 1 | 1 | 2 |
| Christian Brothers College, St. Louis, Mo. | 0 | 0 | 1 |
| Cincinnati, University of, Cincinnati, O. | 6 | 7 | 6 |
| Citadel, The, Charleston, S. C. | 0 | 1 | 1 |
| Clark College, Worcester, Mass. | 2 | 2 | 2 |
| Clarkson School of Technology, Potsdam, N. Y. | 5 | 6 | 4 |
| Clemson A. & M. College, Clemson College, S. C. | 1 | 1 | 1 |
| Cleveland Technical H. S., Cleveland, O. | 1 | 1 | 1 |
| Colorado College, Colorado Springs, Colo. | 1 | 1 | 2 |
| Colorado School of Mines, Golden, Colo. | 1 | 1 | 1 |
| Colorado State Agri. College, Fort Collins, Colo. | 5 | 5 | 4 |
| Colorado, University of, Boulder, Colo. | 5 | 5 | 5 |
| Columbia University, New York, N. Y. | 11 | 13 | 13 |
| Columbus Trades School, Columbus, O. | 0 | 1 | 1 |
| Cooper Union, New York, N. Y. | 4 | 5 | 6 |
| Cornell College, Mt. Vernon, Ia. | 1 | 1 | 2 |
| Cornell University, Ithaca, N. Y. | 11 | 31 | 29 |
| Cumberland University, Lebanon, Tenn. | 0 | 0 | 1 |
| Dartmouth College, Hanover, N. H. | 3 | 5 | 4 |
| Delaware College, Newark, Del. | 2 | 3 | 3 |

| | | | |
|---|---|---|---|
| Denison University, Granville, O. | 1 | 1 | 1 |
| Dorchester H. S., Dorchester Center, Mass. | 1 | 1 | 1 |
| Drexel Institute, Philadelphia, Pa. | 5 | 4 | 4 |
| Escola de Engenharia, Porto Alegre, Brazil | 0 | 1 | 1 |
| Florida, University of, Gainesville, Fla. | 2 | 3 | 4 |
| Franklin Institute, Philadelphia, Pa. | 1 | 1 | 1 |
| Franklin Union, Boston, Mass. | 1 | 2 | 2 |
| George Washington University, Washington, D. C. | 3 | 2 | 2 |
| Georgia School of Technology, Atlanta, Ga. | 0 | 0 | 1 |
| Goucher College, Baltimore, Md. | 0 | 0 | 1 |
| Harvard University, Cambridge, Mass. | 11 | 16 | 15 |
| Haverford College, Haverford, Pa. | 1 | 1 | 1 |
| Idaho, University of, Moscow, Ida. | 1 | 3 | 5 |
| Illinois, University of, Urbana, Ill. | 26 | 35 | 42 |
| Instituto Technico Professional, Porto Alegre, Brazil | 1 | 1 | 1 |
| International Correspondence Schools, Scranton, Pa. | 2 | 1 | 2 |
| Iowa State College, Ames, Ia. | 10 | 11 | 13 |
| Iowa, State University of, Iowa City, Ia. | 5 | 8 | 7 |
| Kansas City M. T. H. S., Kansas City, Mo. | 1 | 1 | 1 |
| Kansas State Agri. College, Manhattan, Kans. | 5 | 10 | 8 |
| Kansas, University of, Lawrence, Kans. | 10 | 11 | 9 |
| Kentucky, State University of, Lexington, Ky. | 4 | 4 | 4 |
| Lafayette College, Easton, Pa. | 1 | 1 | 1 |
| Lehigh University, South Bethlehem, Pa. | 10 | 13 | 14 |
| Leland Stanford Jr. Univ., Stanford Univ., Cal. | 3 | 5 | 5 |
| Lewis Institute, Chicago, Ill. | 3 | 3 | 3 |
| Louisiana State University, Baton Rouge, La. | 2 | 3 | 3 |
| Loyola University, Chicago, Ill. | 0 | 0 | 1 |
| McGill University, Montreal, Canada | 2 | 3 | 3 |
| McKinley High School, St. Louis, Mo. | 1 | 1 | 1 |
| McKinley High School, Washington, D. C. | 0 | 1 | 1 |
| Maine, University of, Orono, Me. | 2 | 4 | 6 |
| Manitoba, University of, Winnipeg, Man. | 1 | 2 | 2 |
| Marquette University, Milwaukee, Wis. | 1 | 1 | 1 |
| Massachusetts Agri. College, Amherst, Mass. | 1 | 1 | 1 |
| Massachusetts Inst. of Tech., Boston, Mass. | 34 | 35 | 31 |
| Michigan Agri. College, East Lansing, Mich. | 11 | 13 | 19 |
| Michigan College of Mines, Houghton, Mich. | 6 | 7 | 7 |
| Michigan, University of, Ann Arbor, Mich. | 11 | 12 | 11 |
| Millikin University, Jas., Decatur, Ill. | 3 | 4 | 2 |
| Minnesota, University of, Minneapolis, Minn. | 20 | 23 | 28 |
| Mississippi A. & M. College, Agricultural College, Miss. | 1 | 2 | 4 |
| Mississippi, University of, University, Miss. | 3 | 3 | 1 |
| Missouri School of Mines, Rolla, Mo. | 0 | 2 | 3 |

| | | | |
|---|---|---|---|
| Missouri, University of, Columbia, Mo. | 10 | 13 | 11 |
| Montana Agri. College, Bozeman, Mont. | 1 | 2 | 2 |
| Montana, University of, Missoula, Mont. | 1 | 1 | 2 |
| Nebraska, University of, Lincoln, Nebr. | 6 | 10 | 11 |
| Nevada, University of, Reno, Nev. | 3 | 2 | 1 |
| New Hampshire College, Durham, N. H. | 2 | 2 | 2 |
| New Mexico Agri. College, Agricultural College, N. M. | 1 | 2 | 4 |
| New York University, New York, N. Y. | 4 | 4 | 4 |
| North Carolina Agri. College, West Raleigh, N. C. | 2 | 4 | 3 |
| North Carolina, University of, Chapel Hill, N. C. | 1 | 2 | 2 |
| North Dakota Agri. College, Agricultural College, N. D. | 1 | 2 | 2 |
| North Dakota, University of, Grand Forks, N. D. | 3 | 4 | 4 |
| Northwestern University, Evanston, Ill. | 4 | 4 | 4 |
| Nova Scotia Technical College, Halifax, N. S. | 1 | 2 | 3 |
| Ohio Northern University, Ada, O. | 1 | 2 | 2 |
| Ohio State University, Columbus, O. | 22 | 23 | 23 |
| Oklahoma A. & M. College, Stillwater, Okla. | 0 | 1 | 1 |
| Oregon Agri. College, Corvallis, Ore. | 1 | 1 | 3 |
| Oregon, University of, Eugene, Ore. | 1 | 1 | 3 |
| Pasadena High School, Pasadena, Cal. | 0 | 0 | 1 |
| Pei Yang University, Tientsin, China | 2 | 2 | 2 |
| Pennsylvania College, Gettysburg, Pa. | 0 | 0 | 1 |
| Pennsylvania State College, State College, Pa. | 16 | 15 | 14 |
| Pennsylvania, University of, Philadelphia, Pa. | 6 | 6 | 7 |
| Philadelphia Central M. T. H. S., Philadelphia, Pa. | 1 | 1 | 1 |
| Pittsburgh Central H. S., Pittsburgh, Pa. | 0 | 0 | 1 |
| Pittsburgh, University of, Pittsburgh, Pa. | 1 | 5 | 6 |
| Pomona College, Claremont, Calif. | 0 | 0 | 1 |
| Pratt Institute, Brooklyn, N. Y. | 17 | 18 | 14 |
| Princeton University, Princeton, N. J. | 2 | 2 | 2 |
| Purdue University, Lafayette, Ind. | 18 | 19 | 17 |
| Queensland, University of, Brisbane, Australia | 0 | 0 | 1 |
| Rensselaer Polytechnic Institute, Troy, N. Y. | 3 | 3 | 3 |
| Rhode Island State College, Kingston, R. I. | 0 | 0 | 1 |
| Rose Polytechnic Institute, Terre Haute, Ind. | 2 | 2 | 3 |
| Rutgers College, New Brunswick, N. J. | 5 | 7 | 6 |
| Sheffield, University of, Sheffield, England | 1 | 1 | 1 |
| Southern California University, Los Angeles, Cal. | 2 | 2 | 2 |
| South Dakota State College, Brookings, S. D. | 3 | 4 | 4 |
| South Dakota, University of, Vermillion, S. D. | 1 | 1 | 2 |
| St. Petersburg, Polytech. Inst. of, St. Petersburg, Russia. | 0 | 1 | 1 |
| Stevens Institute of Technology, Hoboken, N. J. | 14 | 14 | 12 |
| Stuyvesant High School, New York City | 0 | 0 | 1 |
| Swarthmore College, Swarthmore, Pa. | 1 | 1 | 1 |

| | | | |
|---|---|---|---|
| Sydney, University of, Sydney, Australia | 1 | 2 | 1 |
| Syracuse University, Syracuse, N. Y. | 2 | 3 | 2 |
| Tennessee, University of, Knoxville, Tenn. | 3 | 3 | 2 |
| Texas A. & M. College, College Station, Tex. | 6 | 5 | 8 |
| Texas, University of, Austin, Tex. | 3 | 5 | 3 |
| Throop Polytechnic Institute, Pasadena, Cal. | 1 | 1 | 2 |
| Tokyo Imperial University, Tokyo, Japan | 0 | 1 | 1 |
| Toronto, University of, Toronto, Canada | 4 | 4 | 6 |
| Tufts College, Tufts College, Mass. | 9 | 9 | 10 |
| Tulane University, New Orleans, La. | 4 | 3 | 3 |
| Union University, Schenectady, N. Y. | 9 | 8 | 6 |
| United States Naval Academy, Annapolis, Md. | 1 | 1 | 1 |
| Utah, University of, Salt Lake City, Utah | 2 | 3 | 9 |
| Valparaiso University, Valparaiso, Ind. | 1 | 1 | 1 |
| Vanderbilt University, Nashville, Tenn. | 1 | 1 | 1 |
| Vermont, University of, Burlington, Vt. | 6 | 5 | 6 |
| Virginia Military Institute, Lexington, Va. | 1 | 1 | 2 |
| Virginia Polytechnic Institute, Blacksburg, Va. | 2 | 4 | 5 |
| Washington & Lee University, Lexington, Va. | 1 | 1 | 1 |
| Washington State College, Pullman, Wash. | 0 | 0 | 1 |
| Washington University, St. Louis, Mo. | 7 | 8 | 9 |
| Washington, University of, Seattle, Wash. | 7 | 8 | 8 |
| Wentworth Institute, Boston, Mass. | 0 | 1 | 2 |
| West Virginia University, Morgantown, W. Va. | 5 | 8 | 5 |
| Whitman College, Walla Walla, Wash. | 1 | 1 | 3 |
| Williamson Free School, Williamson School, Pa. | 2 | 2 | 2 |
| Wisconsin, University of, Madison, Wis. | 24 | 28 | 27 |
| Worcester Polytechnic Institute, Worcester, Mass. | 13 | 17 | 11 |
| Wyoming, University of, Laramie, Wyo. | 0 | 1 | 2 |
| Yale University, New Haven, Conn. | 13 | 14 | 14 |

## GENERAL SUMMARY.

### Different Institutions Represented.

| | 1909 | 1910 | 1911 |
|---|---|---|---|
| Colleges and Universities teaching Engineering | | | |
| Domestic | 126 | 121 | 137 |
| Foreign | 9 | 12 | 12 |
| Manual Training, High, Correspondence, and Trade Schools | 9 | 13 | 16 |
| Total Institutions | 144 | 146 | 165 |
| Teachers, and, in many cases, also practitioners | 642 | 767 | 787 |
| Practitioners, not teaching | 105 | 171 | 253 |
| Total Members | 747 | 938 | 1040 |

# CONSTITUTION

OF THE

# Society for the Promotion of Engineering Education

---

1. NAME—This organization shall be called the SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.

2. MEMBERS—Members of the Society shall be those persons who occupy or have occupied responsible positions in the work of engineering instruction, together with engineering practitioners and other persons interested in engineering education.

Honorary Members of the Society shall be such persons as may be recommended by unanimous vote of the Council after a letter ballot. In taking this ballot, the Secretary is directed to close the polls one month after the names of the candidates are sent out. Councilors not heard from will be counted in favor of the candidate. Honorary Members shall not have the right to vote, shall not be eligible to office, and shall not be required to pay any fees or dues.

Any Member not in arrears for dues may become a Life Member by paying Fifty Dollars into the Treasury of the Society at one time.

The name of each candidate for membership shall be proposed in writing to the Council by two members by whom he is personally known. Such name, if approved by the Council, shall be voted on by the Society at the annual meeting, a vote of three-fourths of those present being required to elect; or, during the period between annual meetings, an affirmative letter ballot of three-fourths of those members of the Council whose vote reaches the Secretary within one month from the time of sending out the name of the candidate shall elect. Such letter ballot elections shall be credited to the previous annual meeting and dues will date from that time.

3. Officers—There shall be a President, two Vice-Presidents, a Secretary and a Treasurer, each to hold office for one year, or until their successors have been elected and have qualified. The Officers shall be elected by ballot of the Society at the annual meeting.

4. Council—The Council of this Society shall consist of twenty-one elective members, one-third of whom shall retire annually. The officers and the Past Presidents of the Society shall be members of the Council *ex-officiis.*

Any member of this Society shall be eligible to election to the Council, provided that not more than one elective member shall be from any one college.

Members of the Council shall be elected by ballot by the Society at its annual meeting.

The Council shall constitute a general executive body of the Society, pass on proposals for membership, elect candidates *ad interim,* attend to all business of the Society, receive and report on propositions for amendments to the constitution, and shall have power to fill temporary vacancies in the offices.

The President of the Society shall be Chairman of the Council, and the Secretary of the Society shall be Secretary of the Council and shall keep the minutes of its meetings and an accurate record of all its actions.

When votes taken by letter ballot of the Council shall be required, all votes which reach the Secretary within one month from the time of sending out the ballots shall be counted, but votes reaching the Secretary later than the time here specified shall not be counted.

5. Nominating Committee—The Nominating Committee shall consist of the Past Presidents and the seven elective members of the Council retiring the following year, provided, however, that if, of this committee, the number in attendance at any meeting be less than five, the President shall make appointments so as to form a committee of five.

6. Fees and Dues—The admission fee, which shall also include the first year's dues, shall be *Four Dollars* (*$4.00*), and the annual dues thereafter *Four Dollars* (*$4.00*), pay-

able at the time of the annual meeting. The fiscal year shall end with the opening of the first General Session of the Annual Meeting. Those in arrears more than one year shall not be entitled to vote, nor to receive copies of the PROCEEDINGS, and such members shall be notified thereof by the Secretary one month previous to the annual meeting. Any member who has been in arrears more than two years and duly notified by the Secretary, shall be dropped from the roll, until such arrearages are paid.

7. MEETINGS—There shall be a regular meeting occurring at the time and place of the meeting of the American Association for the Advancement of Science, or of some one of the Nation Engineering Societies, or otherwise as the Council may determine.

8. PUBLICATIONS—The Proceedings of the Society, and such papers or abstracts as may be approved by the Council, shall be published as soon as possible after each annual meeting.

9. AMENDMENTS—This Constitution may be amended by a two-thirds vote of those present at any regular meeting of the Society provided the Amendment shall have been approved by a two-thirds vote of the Council taken by letter ballot.

---

## BY-LAWS OF THE SOCIETY AND RULES GOVERNING THE COUNCIL.

*First.* The Officers of the Society shall constitute a Committee to arrange for the annual meeting and to prepare a program for the same.

*Second.* The President, the Secretary and the Treasurer shall constitute an Executive Committee which shall have charge of all matters relating to the expenditure of money of the Society, the making of appropriations for Committees and other purposes, the making of contracts, the approval of bills, and also during the period between the meetings of the Council shall have charge of other business affairs of the Society.

*Third.* Expenditures of money may be made only in accordance with a definite appropriation or direct vote of the

Executive Committee and bills shall not be paid by the Treasurer until they have been approved by all members of the Executive Committee.

*Fourth.* Reading of papers shall be limited to fifteen minutes each or to such other time as may be designated by the Program Committee, and abstracts of papers of about three hundred words shall be printed when practicable, and distributed in advance to the members.

*Fifth.* The time occupied by each person in the discussion of any paper shall not exceed five minutes.

*Sixth.* The President, the Secretary and the retiring Secretary shall constitute a Publication Committee, of which the Secretary shall be Chairman, to edit and have charge of the publication of the PROCEEDINGS of the Society, *except the volume of Proceedings of the last convention, which shall be edited by the retiring Secretary.* If at any time there be no retiring Secretary the retiring President shall be a member of this Committee.

*Seventh.* Additions or amendments may be made to these By-Laws on recommendation of the Council by a two-thirds affirmative vote at any regular meeting of the Society.

---

## PUBLICATIONS.

The publications of the Society can be obtained from the Secretary. The current issues are distributed gratuitously to members in good standing. The price of the bound volumes of the Proceedings is $2.50 to non-members, $2.00 to public libraries, and $1.50 to members for their own libraries.

The BULLETIN is issued monthly from September to June. The price to non-members is *$3.00* per year. Libraries may order the BULLETIN and the PROCEEDINGS at *$4.00* per year, if the two are ordered together.

Reprints of papers may be ordered when the paper is in type form, and either with or without covers, at a price depending upon the number of pages and copies desired.

---

Italics in the above indicate changes made during the past year.

# PAST OFFICERS

**Special Committee for Division E, Engineering Education, World's Engineering Congress, 1893**

IRA O. BAKER, Chairman, HENRY T. EDDY, Vice-Chairman,
WM. R. HOAG, Secretary, C. FRANK ALLEN, Sec'y, *pro tem.*,
MORTIMER E. COOLEY, SAMUEL W. STRATTON,
STORM BULL.*

## PRESIDENTS

DE VOLSON WOOD,* 1893–4, CALVIN M. WOODWARD, 1902–3,
GEORGE F. SWAIN, 1894–5, C. FRANK ALLEN, 1903–4,
MANSFIELD MERRIMAN, 1895–6, FRED W. McNAIR, 1904–5,
HENRY T. EDDY, 1896–7, CHARLES L. CRANDALL, 1905–6,
JOHN B. JOHNSON,* 1897–8, DUGALD C. JACKSON, 1906–7,
THOS. C. MENDENHALL, 1898–9, CHARLES S. HOWE, 1907–8.
IRA O. BAKER, 1899–1900, FRED. E. TURNEAURE, 1908–9,
FRANK O. MARVIN, 1900–1, HENRY S. MUNROE, 1909–10.
ROBERT FLETCHER, 1901–2, ARTHUR N. TALBOT, 1910–11.

## VICE-PRESIDENTS

SAMUEL B. CHRISTY, GEORGE F. SWAIN, 1893–4,
ROBERT H. THURSTON,* FRANK O. MARVIN, 1894–5,
FRANK O. MARVIN, CADY STALEY, 1895–6,
JOHN GALBRAITH, JOHN M. ORDWAY, 1896–7,
THOMAS C. MENDENHALL, HARRY W. TYLER, 1897–8,
C. FRANK ALLEN, HENRY W. SPANGLER, 1898–9,
ROBERT FLETCHER, CHARLES D. MARX, 1899–1900,
THOMAS GRAY,* ALBERT KINGSBURY, 1900–1,
STORM BULL,* CALVIN M. WOODWARD, 1901–2,
JOHN J. FLATHER, FRED W. McNAIR, 1902–3,
CHARLES L. CRANDALL, JAMES C. NAGLE, 1903–4,
CLEMENT R. JONES, ELWOOD MEAD, 1904–5,
WILLIAM T. MAGRUDER, JOHN P. JACKSON, 1905–6,
CLARENCE A. WALDO, WILLIAM G. RAYMOND, 1907–8,
MORTIMER E. COOLEY, OLIN H. LANDRETH, 1908–9,
ARTHUR N. TALBOT, ARTHUR L. WILLISTON, 1909–10.
MILO S. KETCHUM, WILLIAM KENT, 1910–11.

## TREASURERS

STORM BULL,* 1893–5, ARTHUR N. TALBOT, 1902–4,
JOHN J. FLATHER, 1895–9, FRED. P. SPALDING, 1904–6,
CLARENCE A. WALDO, 1899–1902, ANSON MARSTON, 1906–7.

## SECRETARIES

JOHN B. JOHNSON,* 1893–5, HENRY S. JACOBY, 1900–2,
C. FRANK ALLEN, 1895–7, CLARENCE A. WALDO, 1902–4,
ALBERT KINGSBURY, 1897–9, MILO S. KETCHUM, 1904–6,
EDGAR MARBURG, 1899–1900, WILLIAM T. MAGRUDER, 1906–7.
ARTHUR L. WILLISTON, 1907–9.

* Deceased.

## Members of Previous Councils

**Terms of Office Expired in 1894.**

M. E. Cooley, H. T. Eddy, W. F. M. Goss,
W. R. Hoag, S. W. Robinson,* H. W. Spangler,
R. H. Thurston.*

**Terms of Office Expired in 1895.**

H. T. Bovey, W. H. Burr, O. H. Landreth,
Mansfield Merriman, W. G. Raymond, G. F. Swain,
De Volson Wood.*

**Terms of Office Expired in 1896.**

I. O. Baker, Storm Bull,* S. B. Christy,
John Galbraith, J. B. Johnson,* F. O. Marvin,
C. D. Marx.

**Terms of Office Expired in 1897.**

H. T. Eddy, J. J. Flather, J. P. Jackson,
Albert Kingsbury, L. S. Randolph, S. W. Robinson,*
R. H. Thurston.*

**Terms of Office Expired in 1898.**

C. F. Allen, C. L. Mees, Mansfield Merriman,
J. M. Ordway, W. G. Raymond, Cady Staley,
R. S. Woodward.

**Terms of Office Expired in 1899.**

Arthur Beardsley, Robert Fletcher, John Galbraith,
William Kent, T. C. Mendenhall, W. H. Schuerman,
M. E. Wadsworth.

**Terms of Office Expired in 1900.**

Storm Bull,* L. G. Carpenter, Albert Kingsbury,
F. O. Marvin, R. B. Owens, R. L. Sackett,
R. H. Thurston.*

**Terms of Office Expired in 1901.**

T. M. Drown,* M. A. Howe, I. N. Hollis,
Gaetano Lanza, P. C. Ricketts, R. G. Thomas,
C. M. Woodward.

**Terms of Office Expired in 1902.**

Brown Ayres, G. W. Bissell, J. J. Flather,
W. T. Magruder, F. W. McNair, J. M. Porter,
A. J. Wood.

**Terms of Office Expired in 1903.**

C. F. Allen, D. C. Jackson, N. C. Ricker,
J. P. Brooks, Edgar Marburg, A. L. Williston,
J. C. Nagle.

**Terms of Office Expired in 1904.**

W. F. M. Goss, Thomas Gray,* D. C. Humphreys,
O. H. Landreth, W. G. Raymond, L. E. Reber,
L. S. Randolph.

* Deceased.

**Terms of Office Expired in 1905.**

Wm. Esty, L. J. Johnson, W. M. Towle,
H. S. Jacoby, Elwood Mead, J. L. Van Ornum,
Edward Orton, Jr.

**Terms of Office Expired in 1906.**

John Galbraith, Charles S. Howe, Walter M. Riggs,
Frederick P. Spalding, Henry W. Spangler, Fred. E. Turneaure,
Herman K. Vedder.

**Terms of Office Expired in 1907.**

Thomas Gray,* James C. Nagle, William G. Raymond,
Louis E. Reber, Arthur N. Talbot, Clarence A. Waldo,
Robert S. Woodward.

**Terms of Office Expired in 1908.**

Victor C. Alderson, Arthur H. Ford, H. P. Talbot,
Francis C. Caldwell, Henry S. Munroe, A. L. Williston,
Frederick W. Sperr.

**Terms of Office Expired in 1909.**

Charles F. Burgess, John F. Hayford, Thomas W. Palmer,
Arthur M. Greene, Jr., Milo S. Ketchum, Joseph A. Thaler,
Henry H. Norris.

**Terms of Office Expired in 1910.**

Fred W. Atkinson, Walter B. Russell, William S. Franklin,
Mortimer E. Cooley, William Kent, Charles F. Scott,
Harold B. Smith.

**Terms of Office Expired in 1911.**

Lester P. Breckenridge, Lewis J. Johnson, William G. Raymond,
Thomas Gray.* William T. Magruder, Herman Schneider,
Clarence A. W. Waldo.

* Deceased.

## DECEASED MEMBERS

| Name. | Year of Election. | Date of Death. | Memoir. Vol. Page. |
|---|---|---|---|
| William A. Anthony..... | 1907 ..... | May 29, 1908. | XVI, 409 |
| George W. Atherton..... | 1904 ..... | July 24, 1906. | XIV, 292 |
| Volney G. Barbour..... | 1894 ..... | June 4, 1901. | IX, 340 |
| Charles B. Brush..... | 1893 ..... | June 3, 1897. | VII, 181 |
| Storm Bull ..... | 1893 ..... | November 18, 1907. | XVI, 407 |
| Octave Chanute ..... | 1907 ..... | November 23, 1910. | |
| Eckley B. Coxe..... | 1894 ..... | May 13, 1895. | VII, 182 |
| Thomas M. Drown..... | 1895 ..... | November 16, 1904. | XII, 244 |
| Chas. B. Dudley..... | 1894 ..... | December 21, 1909. | XVIII, 446 |
| Francis R. Fava, Jr..... | 1894 ..... | March 28, 1896. | VII, 183 |
| Estevan A. Fuertes..... | 1894 ..... | January 16, 1903. | XI, 372 |
| Henry Fulton ..... | 1894 ..... | December 6, 1901. | X, 258 |
| Herbert G. Greer..... | 1894 ..... | March 7, 1900. | VIII, 371 |
| Thomas Gray ..... | 1895 ..... | December 19, 1908. | XVII, 238 |
| Lyman Hall ..... | 1904 ..... | August 16, 1905. | XIV, 287 |
| E. L. Hancock ..... | 1903 ..... | October 1, 1911. | |
| Albert H. Heller..... | 1903 ..... | February 20, 1906. | XIV, 290 |
| John B. Johnson..... | 1893 ..... | June 23, 1902. | X, 259 |
| J. W. Johnson ..... | 1907 ..... | August 21, 1911. | |
| Rodney G. Kimball..... | 1894 ..... | April 25, 1900. | X, 261 |
| Burton S. Lanphear..... | 1897 .... | October 14, 1904. | XII, 249 |
| Benjamin F. La Rue..... | 1893 ..... | December 22, 1903. | XII, 243 |
| N. W. Lord ..... | 1907 ..... | May 23, 1911. | |
| C. S. Magowan..... | 1896 ..... | November 14, 1907. | XVI, 406 |
| Charles P. Matthews.... | 1898 ..... | November 23, 1907. | XVI, 408 |
| S. W. Robinson..... | 1893 ..... | October 31, 1910. | |
| Justus M. Silliman..... | 1894 ..... | April 15, 1896. | VII, 184 |
| James H. Stanwood..... | 1894 ..... | May 24, 1896. | VII, 185 |
| Robert H. Thurston..... | 1893 ..... | October 25, 1903. | XII, 246 |
| Alphonse N. Van Daell.. | 1897 ..... | March 28, 1899. | VII, 186 |
| J. A. Veazey ..... | 1911 ..... | August 21, 1911. | |
| John R. Wagner..... | 1894 ..... | January 21, 1899. | VII, 187 |
| Francis A. Walker..... | 1896 ..... | January 5, 1897. | VII, 188 |
| Howard S. Webb..... | 1897 ..... | June 12, 1905. | XIV, 286 |
| Nelson O. Whitney..... | 1893 ..... | March 17, 1901. | IX, 339 |
| James R. Willett..... | 1896 ..... | May 9, 1907. | XV, 679 |
| De Volson Wood..... | 1893 ..... | June 27, 1897. | V, 325 |